

# Galaxy

SCIENCE FICTION

December 1967

60¢

## OUTPOST OF EMPIRE

by POUL  
ANDERSON

## King of The Golden World

A Complete  
Short Novel

by ROBERT  
SILVERBERG

## HANDICAP

by LARRY  
NIVEN



K

Galaxy

DECEMBER

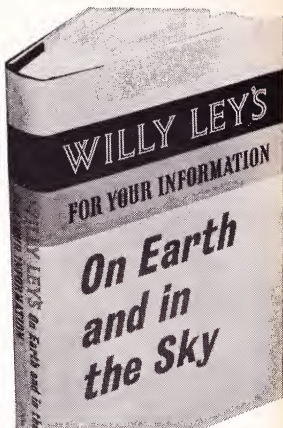
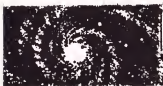
1967

ANDERSON • SILVERBERG • NIVEN

FOR  
YOUR  
INFORMATION

For sixteen years GALAXY'S most popular feature. Now in hardbound book form. The first of a series—updated and divided by subjects into separate books.

Facts and figures as only WILLY LEY can write them. Send today. Satisfaction guaranteed.



DOUBLEDAY & COMPANY, INC. (or to your bookstore)  
Dept. 7-GA-3, GARDEN City, N.Y. 11531

Please send me \_\_\_\_\_ copies of WILLY LEY'S FOR YOUR INFORMATION: ON EARTH AND IN THE SKY. I understand that I may return the book(s) within two weeks without cost or obligation if not completely satisfied. Otherwise, I'll be billed just \$4.95 per copy, plus shipping costs as payment in full.

NAME .....

ADDRESS .....

CITY ..... STATE ..... ZIP .....

SAVE! Send payment now and we pay postage. Same 2-week privilege guaranteed, of course.

# For the first time anywhere—33 great new stories by all the science fiction masters of our time.



Not collected from magazines, not collected from other books, every one of these stories is new and original, especially written for this volume — to make it the most exciting science fiction anthology in years, and a "collector's item" in years to come.

**DANGEROUS VISIONS**, edited by Harlan Ellison, contains almost a quarter of a million words — one of the biggest anthologies of original material ever assembled in any field. Included are such long-awaited items as Theodore Sturgeon's first novella in seven years, the first Fritz Leiber story in four years, the first story in twenty years by Howard Rodman . . . stories of all lengths: as short as Lester del Rey's "Evensong"

and Henry Slesar's "Ersatz"; as long as Keith Laumer's 12,000 word "Test to Destruction" and Philip José Farmer's 33,000 word "Riders of the Purple Wage." Each is illustrated by Leo and Diane Dillon, each has a preface by Harlan Ellison and an afterword by the author, revealing insights to your favorite writers, available nowhere else.

To get your copy of **DANGEROUS VISIONS**, mail the free examination coupon. If you are not delighted with the book, you may return it and owe nothing.

## THE COMPLETE ROSTER OF CONTRIBUTORS:

Lester Del Rey	Robert Silverberg	Samuel R. Delany
Philip José Farmer	Miriam Allen deFord	Frederik Pohl
Harlan Ellison	Brian W. Aldiss	Robert Bloch
Philip K. Dick	Larry Niven	Howard Rodman
Joe L. Hensley	Poul Anderson	Fritz Leiber
2 by David R. Bunch	Carol Emshwiller	James Cross
Theodore Sturgeon	Larry Eisenberg	Damon Knight
Sonya Dorman	John T. Sladek	Henry Slesar
Kris Neville	R. A. Lafferty	Jonathan Brand
John Brunner	Keith Laumer	J. G. Ballard
Roger Zelazny		Norman Spinrad

## FREE EXAMINATION COUPON

To your bookseller or to  
**DOUBLEDAY & COMPANY, INC.**  
Dept. 7-GX-12, Garden City, N. Y. 11530  
Please send me . . . . . copies of **DANGEROUS VISIONS**. I understand I have two full weeks to decide whether to keep the book(s). If I wish, I may return them within that time and owe nothing. Otherwise, I'll be billed just \$6.95 plus postage as payment in full.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**SAVE:** Enclose payment now and we pay postage. Same return privilege guaranteed.

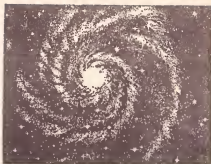
Offer available only in U.S.A. and Canada.

# Galaxy

## MAGAZINE

ALL STORIES NEW

Galaxy is published in French, German, Italian, Japanese and Spanish. The U. S. Edition is published in Braille and Living Tape.



December, 1967 • Vol. 26, No. 2

### CONTENTS

#### NOVELETTES

OUTPOST OF EMPIRE ..... 9

by Poul Anderson

HANDICAP ..... 153

by Larry Niven

#### SHORT STORIES

THE SOUTH WATERFORD RUMPLE CLUB. 85

by Richard Wilson

KING OF THE GOLDEN WORLD ..... 97

by Robert Silverberg

BLACK CORRIDOR ..... 121

by Fritz Leiber

THE RED EUPHORIC BANDS ..... 132

by Philip Latham

THE FAIRLY CIVIL SERVICE ..... 178

by Harry Harrison

#### NON-FACT ARTICLE

GALACTIC CONSUMER REPORT ..... 145

by John Brunner

#### SCIENCE DEPARTMENT

FOR YOUR INFORMATION ..... 110

by Willy Ley

#### FEATURES

EDITORIAL ..... 6

by Frederik Pohl

GALAXY BOOKSHELF ..... 187

by Algis Budrys

**FREDERIK POHL**

*Editor*

**WILLY LEY**

*Science Editor*

**JUDY-LYNN BENJAMIN**

*Associate Editor*

**ROBERT M. GUINN**

*Publisher*

**LAWRENCE LEVINE ASSOC.**

*Advertising*

**MAVIS FISHER**

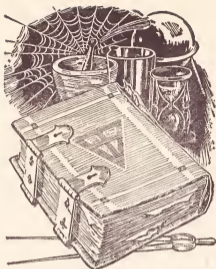
*Circulation Director*

GALAXY MAGAZINE is published bi-monthly by Galaxy Publishing Corporation. Main offices: 421 Hudson Street, New York, N.Y. 10014. 60c per copy Subscription: (12 copies) \$6.00 in the United States, Canada, Mexico, South and Central America and U. S. Possessions. Elsewhere \$7.00. Second-class postage paid at New York, N.Y. and at additional mailing offices. Copyright New York 1967 by Galaxy Publishing Corporation, Robert M. Guinn, President. All rights including translations reserved. All material submitted must be accompanied by self-addressed stamped envelopes. The publisher assumes no responsibility for unsolicited material. All stories printed in this magazine are fiction and any similarity between characters and actual persons is coincidental.

Printed in the U.S.A.  
By The Guinn Co., Inc. N. Y.  
Title Reg. U. S. Pat. Off.

Cover by MORROW from OUTPOST OF EMPIRE

**Secrets  
entrusted  
to a  
few**



## *The Unpublished Facts of Life*

THERE are some things that cannot be generally told — *things you ought to know*. Great truths are dangerous to some—but factors for *personal power and accomplishment* in the hands of those who understand them. Behind the tales of the miracles and mysteries of the ancients, lie centuries of their secret probing into nature's laws—their amazing discoveries of the *hidden processes of man's mind*, and the *mastery of life's problems*. Once shrouded in mystery to avoid their destruction by mass fear and ignorance, these facts remain a useful heritage for the thousands of men and women who privately use them in their homes today.

### **THIS FREE BOOK**

The Rosicrucians (not a religious

organization) an age-old brotherhood of learning, have preserved this secret wisdom in their archives for centuries. *They now invite you to share the practical helpfulness of their teachings.* Write today for a free copy of the book, "The Mastery of Life." Within its pages may lie a new life of opportunity for you. Address: Scribe T.B.R.

<p align="center"><b>— SEND THIS COUPON —</b></p> <p>Scribe T.B.R. The ROSICRUCIANS (AMORC) San Jose, California 95114</p> <p>Please send me the free book, <i>The Mastery of Life</i>, which explains how I may learn to use my faculties and powers of mind.</p> <p>Name _____</p> <p>Address _____</p> <p>City _____ Zip Code _____</p> <p align="center">PLEASE INCLUDE YOUR ZIP CODE</p>	
---	--

***The Rosicrucians*** (AMORC) SAN JOSE, CALIFORNIA 95114, U.S.A.

# ON HUGOS

A lot more than thirty years ago, when I was about ten years old, another kid gave me a copy of a magazine that seemed pretty strange and wonderful. The cover showed a large, scaly green monster battering a spaceship with a rock about the size of a three-story house. I opened it up, and was lost.

I don't now recall a single story in that first issue of a science-fiction magazine I ever read. Which is a pity, because it certainly changed my life. I do recall that the name of the magazine was *Science Wonder Stories Quarterly*, and that the editor was a man named Hugo Gernsback.

Time passed. *Science Wonder Stories Quarterly* changed into just plain *Wonder Stories*, and a couple of years later, along about 1932, the same Hugo Gernsback had an idea for a club of science-fiction readers. It was called The Science Fiction League, and, though his motives were of

course more concerned with selling a few extra copies of the magazine than with shaping human destinies, the SFL in its turn changed lots of lives. It filled a need. Science-fiction readers in those days had a tendency to hide under rocks. (Now, of course, we're respectable — I mean, after all, sf now has the proud record of having forecast atomic energy, rocket ships, television, radar, etc., so people take us more seriously. But in those days, you see, we were just *making* the predictions; they hadn't come true yet.) The SFL was a way of getting in touch with other people who shared the same crazy, secret pleasure in thinking about other times and other planets; and it prospered. Chapters started up all over the place — a big one in Brooklyn, a lively one in Chicago, a Los Angeles chapter so healthy that even now it's still meeting, though it changed its name somewhen over

# "WITH GOD All Things Are Possible"!

Matthew 19:26

Dear Friend:

Have You Got **PERSONAL PROBLEMS**  
That Are Worrying You?

Have World-Wide Sin, Violence and De-  
pression upset your life as they have so  
many, many others?

Are You In Poor Health?

Are You Worried About Money Troubles,  
Debts or Your Job?

Is Some One Dear to You Drinking or  
Gambling Too Much?

Would You Like to Have More Friends?

Are You Worried About Some One Dear to  
You For Any Reason?

Have You Got Love or Family Troubles?

Would You Like to Have Deeper Spiritual  
Understanding?

Are You Lonely? Are You Afraid of The  
Future?

Would You Like More Success, Happiness,  
"Good Fortune", Peace of Mind?

If you have any of these Problems, or  
others like them, Dear Friend, then here is  
wonderful NEWS of a remarkable NEW  
WAY of PRAYER that is helping  
thousands to glorious new happiness and  
joy! And it may bring a whole new world  
of happiness and joy to you — very, very  
quickly, too!



**FREE to**

**All Who Need Help**

Just clip this message NOW and mail  
with your name and address, (even a post  
card will do. We will rush you this wonder-  
ful NEW MESSAGE of PRAYER and  
FAITH to you by Return Mail, plus a  
FREE copy of our magazine called  
FAITH which will show you exactly how  
to apply our wonderful NEW WAY of  
PRAYER in seeking God's Guidance and  
Help in meeting your Problems. We will  
also send you FREE the beautiful golden  
Cross shown below, for you to keep and  
treasure. You will bless this day, Dear  
Friend, so don't delay! If you would like  
more Happiness, Success and "Good  
Fortune" in life please use the coupon  
below to send us your name and address  
NOW!

Please clip and mail this Coupon now!

To LIFE-STUDY FELLOWSHIP

4 East 46th St., New York, N.Y. 10017

Please send me absolutely FREE, your  
Wonderful NEW MESSAGE of PRAYER  
AND FAITH, plus a FREE Copy of FAITH  
Magazine and the FREE Golden Cross. My  
name and address is:

MR. \_\_\_\_\_

MRS. \_\_\_\_\_

MISS \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**FREE If  
You Act  
Now**

This Lovely Golden  
CROSS for you to  
keep and treasure,



the years, another in Philadelphia that's also still around. When fan met fan, the result was what we now call "fandom" . . .

Hugo Gernsback was probably thinking of other things, but he lit the fuse that led to such huge affairs as the recent World Science Fiction Convention, with 1600 people swarming into a single hotel in New York.

Of course, that's not all Hugo Gernsback did. He was an inventor. He was a publisher of science and medical books, as well as science fiction. And he was a writer — you can still find copies of his most successful novel around; it was called *Ralph 124C41+*, and it had to do with a superhero (that's the "plus" in his number) who watched girls in peril through a super-TV and flew to their rescue in a super-airplane.

A little while ago (as this is written) we got word that the Father of Science Fiction would be with us no more. He died on the 19th of August, of a kidney ailment; because he was the kind of man he was, he donated his body to science, and now some young medical student at Cornell University is no doubt learning anatomy through his posthumous help. It's a sort of a strange thought, but not altogether an unpleasant one; it's what Hugo Gernsback wanted, after all.

Not very many people have done as much with their lives as Hugo Gernsback did with his. Although he was seriously ill in recent years and past the time for taking an active part in science fiction, he still read the magazines now and then. And it was good to know he was out there.

We'll miss him.

But Gernsback's name still lives on — in more than one way, and especially in the annual awards for excellence in the field of science fiction called the "Hugos." There was a moment of silence before they were presented at the recent convention, which was appropriate, and then the Hugos were given out with great noise and ceremony. And that was appropriate, too.

One of the winners came from *Galaxy*, a fact in which we take pride: Jack Vance's "The Last Castle," published here in April, 1966. (Which made it a clean sweep for us, because the others were from our companion magazine, *If* — which won the "best magazine" Hugo again — and the "best artist" was the one who illustrated Vances's story, Jack Gaughan.)

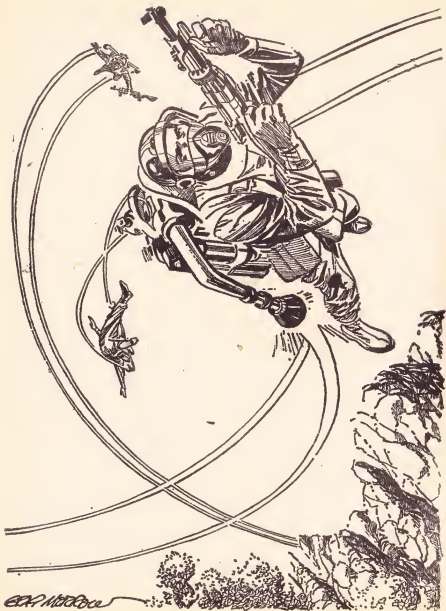
Winning a Hugo is always an honor. This year maybe a little more so than ever.

—THE EDITOR.











# THE SOUTH WATERFORD RUMPLE CLUB

by RICHARD WILSON

*You rumple my money and I'll  
rumple yours — and the devil  
take the American economy!*

The aliens first came over late on a moonless summer night and emptied contents of their bomb bays on the village of South Waterford. The time was 3 a.m. on a Tuesday. It was probably a test run, a kind of motivational research project.

If it had been an all-out attack on the United States, or on a major city, undoubtedly the government would have reacted sooner and more forthrightly. As it was, word about the South Waterford phenomenon, as the Air Force called it, didn't reach Washington right away. And when it did it was somehow confused with the UFO investigations and re-

layed out to Colorado for Dr. Condon's attention. This could explain why the Defense Department seemed to lose interest in the matter for a while.

But the Treasury Department got upset. The aliens had not dropped bombs. The cargo that fluttered down on South Waterford like autumn leaves, though paper, was not propaganda. It was United States currency.

The Assistant to the Fiscal Assistant Secretary of the Treasury recalled a kind of precedent as he was being interviewed by a wire-service reporter. Everybody knew, of course, that during World War II the Germans had

counterfeited British banknotes and, among other things, used them to pay spies. But the Nazis had never dropped their phony pounds over London.

Fewer people knew that the United States had considered bombarding Berlin and other German cities with skillfully counterfeited Reichsmarks. The Assistant Secretary told the newsmen: "President Roosevelt was half convinced that this would be the thing to do. What German worker was going to spend 10 or 12 hours a day in a factory to earn the same kind of money he could pick up off the street?"

"Sounds like a great idea," the newsman said. "Didn't Roosevelt like it?"

"He was crazy about it. He called in his Secretary of the Treasury — you know, Henry Morgenthau — and said, 'Henry, listen to this great idea somebody thought up,' and then told him. But Morgenthau was horrified."

"Why? Because money was sacred?"

"That must have been part of it. But I also remember that Morgenthau pointed out that maybe the Germans would do the same thing to us. It was like poison gas. Nobody dared use it."

Even after the word about the South Waterford incident was channeled back to Washington,

there was delay. The fact that two powerful executive departments, Defense and Treasury, were involved meant that high officials had to consult, advise and compromise before an Executive Order could be drafted for the President's signature.

Then the President refused to sign it. His thinking apparently was that it would be tantamount to panicking to throw the economy of the entire United States out of kilter because of people in a tiny village in the Northeast might benefit temporarily. A statistical-minded adviser calculated what percentage of the total U. S. population lived in South Waterford. It was infinitesimal. So okay, let it be Christmas in July for that handful. Meanwhile, the doves counseled, let's sit tight and try to out think the alleged aliens instead of playing into their hands.

No one knew then that the aliens didn't have hands. They had pseudopods, not to mention bright orange mandibles. Much later somebody in Interior's Fish and Wildlife Service said they were more like octopi than people. Nobody in Treasury was able to figure out how such creatures had developed the skill to simulate U.S. currency. The Defense Department was more interested in the kind of craft the

aliens flew. But by the time these questions had been answered, by direct observation, they were academic.

In the absence of an Executive Order which might have protected the rest of the United States against South Waterford's windfall, the Federal Reserve Board took the unofficial step of advising its member banks to accept only worn currency. The advice was passed down the line until it reached that village's lone financial institution, the South Waterford Trust & Deposit Company.

This led to the formation of a social organization known as the South Waterford Rumple Club.

A couple would invite a dozen neighbors and friends. Then, for two or three hours, conversation and cocktails would be accompanied by the passing from hand to hand of the fresh, crisp bills until they achieved a well used look.

At one point in the circuit the rumpled bills would be dipped into a mixture of face powder and shredded cigarette stubs. This gave them the aroma of having spent some time in a woman's purse. The next night the same group assembled at another couple's house and aged their money.

The host was expected to stock up on giant economy sizes of a

powerful hand cleaner so that at the end of the evening his guests could get the green off.

Jim Vernon's technique was to roll the bill into a ball and work it between his palms. Harold Riehlmann's was to crease it lengthwise as many times as possible; Jane, his wife, creased it the short way.

Lou Aramis was a particularly welcome member of the party. He was the owner of a one-man garage and auto repair shop and came without washing his hands. Lou did more to age a bill authentically than all the rest of them put together.

Lou Aramis parked his car in the lot of the South Waterford Shop 'n' Save Center and started down Main Street with his old army duffel bag over his shoulder. It was 9:01 a.m. Thursday. The sun was warm and he was perspiring.

His first stop was at the Country Drug & Variety Store, Eric Palmer, Ph.C., Prop. It was empty except for Eddie Grimes, who was Eric's partner and assistant pharmacist, and the girl at the soda fountain.

"Hi, there, Lou," Eddie said cheerfully. "You're not back in the army, are you? Fighting the mysterious foe? Old guy like you?" Eddie was older.

Lou dropped the duffel bag to

the floor of the drug counter, where a little square of clear space next to the cash register was surrounded by aspirin, cough medicine, flashlight batteries, key cases, combs, ballpoint pens, photographic supplies, perfume, face cream, razor blades, boxes of chocolates, playing cards, poker chips, paperback books and other drugstore items to tempt the impulse buyer.

"Never fear," Lou said. "I'm here to pay my good old bill. One hundred and fifty-four dollars and seventy-two cents." He opened the duffel bag and pulled out a handful of bills.

Eddie Grimes gave an alarmed little laugh. "Why, there's no hurry, Lou, old friend. You know your credit's good here."

"Sure it is, Eddie, and don't think I'm not grateful for the way you carried me over those rough spots this spring. But I got your bill yesterday, and it was stamped in big red letters 'PLEASE PAY BILLS CURRENTLY,' and I think it's only right to do just that."

"Well, now, Lou, there's absolutely no hurry in your case. We weren't hinting or anything, you know."

"One fifty-five, one seventy-five, two hundred —" Lou was counting out the crumpled, dirty bills on the counter next to a Sominex display.

"Now wait a minute, Lou," Eddie said. He went on counting. "Two-fifty, two-seventy, two-ninety, three hundred and ten, three sixty, three eighty. You carried me, so I want to carry you the next few months, Eddie. There. Four hundred even. Just give me a receipt, will you?"

"Why sure, Lou, but Eric isn't here right now —"

"Your signature's good enough for me, Eddie, old pal. That's fine. Thanks. So long now."

On his way out Lou stopped at the tobacco counter near the soda fountain and bought ten cartons of cigarettes, paying the girl with a battered twenty and a fairly well creased ten. "I'd stock up myself if I were you," he told the girl. "The price is going up, I hear. Just put 'em in the freezer, and they keep forever." He called back to the pharmacist. "So long, Eddie."

"Yeah — so long, Lou. Thanks and come again, I guess."

Lou's next stop was at the South Waterford branch of the giant T. T. Grantberry chain, purveyor of anything from salted nuts and tropical fish to automobile tires, refrigerators, haberdashery and living-room suites, available at nothing down on the revolving charge plan, a small percentage of the balance payable monthly, with 18% interest

mounting up fast at the far end.

Lou went back past the mens' pants, ladies' lingerie, cafe curtain and hooked rug departments to the credit office. It was 9:17 a.m. by the clock that had written across its face **PAY ON TIME — PROTECT YOUR CREDIT RATING.**

"Good morning, sir," the young lady clerk said.

"Good morning," Lou said. He put the duffel bag on the floor and fished his T. T. Grantberry monthly statement out of his back trouser pocket. "It says here I owe you \$457.63, including the service charge, which I guess means interest." There had been that color television set, purchased during his wife's illness when he thought she might be dying.

"Yes, sir," the girl said. "But of course you only have to pay \$46 this month under our optional revolving charge plan. Did you wish to pay the \$46, sir?"

"No, ma'am; I wish to pay the \$457.63 and get out of your revolving charge plan, which is revolving me to death."

Certainly, sir. As you wish. Did you wish to pay by check?"

"No, ma'am. I wish to pay by cash, in the full amount, and then close out the account." He opened the duffel bag and began counting out grimy, well circulated bills. They'd been cir-

culated all around Jim Vernon's living room.

"Oh, sir," the girl said, "I'm not sure I want to take all this money from you. Perhaps you'd like to talk to Mr. Malmster, our assistant credit manager?"

"What's to talk to Mr. Malmster about? It says right here — look — 'You can save on future credit service charges by paying more than your monthly minimum or by paying in full at any time.' This is the time; I'm paying in full." Lou went on counting. "... four hundred and forty, four hundred sixty. Now give me my change and receipt, like a good girl. It's been a pleasure doing business with you."

The girl grinned, finally. "It's okay with me. Just between you and me, leaving T. T. Grantberry out of it, how much more you got in that barracks bag, Mr. Aramis?"

"Plenty."

"Me, too. I paid up myself first thing this morning, before the store opened. I didn't age it as good as you did — I put mine in the vacuum cleaner bag with some of that brown stain furniture polish — but it got by." She winked.

"Good girl," Lou said. "Now just put the receipt through your machine there — that's the way. Thanks."

As he started to walk away

she called: "Don't forget your green stamps." He went back and got them.

On his way out Lou ordered a new refrigerator — with an extra-big freezer compartment — and a sofa bed and a dozen pairs of slacks and eight new tires and a year's supply of toothpaste, razor blades, aspirin and another ten cartons of cigarettes, paid cash at the checkout counter, collected his green stamps and got back into his car.

All this had been practice. Now came the real test.

Lou Aramis headed for the South Waterford Trust & Deposit Company, holder of the mortgage of his two-story older house, his personal loan and his two FHA loans ("Your Neighborly Bank Is Your Loan Headquarters").

Mr. William Briesse (Breezy Bill to fellow members of Rotary and the Lions), vice president in charge of consumer credit, greeted Mr. Lou Aramis, valued customer, with a cautious smile. "Nice day, Mr. Aramis," he said, standing up at his desk behind the railing to shake hands. "How are you?"

"Couldn't be better. And you?" Lou let his duffel bag plop to the floor.

Mr. Briesse looked at it with feigned joviality. "Taking a trip

or anything? Fleeing the UFO's?"

"Not really. Just thought I'd make a few payments."

"Oh?" Mr. Briesse pulled at his lower lip and sank back into his swivel chair. "Well, come in. Sit down."

Lou went through the swinging wooden gate, trailing the duffel bag behind him, and sat in the customer's chair. He fished in his shirt pocket for a cigarette and found the pack empty. He reached into the duffel bag and took out a carton, from which he took a pack, from which he extracted a cigarette, then two, remembering his manners. He offered one to Mr. Briesse. A fifty-dollar bill had fluttered to the floor and the banker went to pick it up and return it to Lou with one hand while accepting the cigarette with the other.

"Yes, thanks," Mr. Briesse said. He lit the cigarettes with his desk lighter (LET OUR CASH WORK FOR YOU) and leaned back in his chair, puffing nervously.

Lou, also nervous, had trouble finding the right papers, pulled them out and then put them in Mr. Briesse's out basket.

"I owe you some money, Mr. Briesse. I mean various amounts for different things, like —"

"Well, now, Mr. Aramis — Lou, if I may — there are various amounts due, to be sure, but

if I recall correctly we're just about current on everything except one of the FHA loans where there's a late charge owing. Some nominal amounts — nothing to worry us."

"Frankly, Mr. Briese, it worries me a great deal to be delinquent in any of my obligations, and I'm here to straighten this out before it gets embarrassing to either of us."

He'd rehearsed this part of it very carefully before coming.

"Call me Bill. Nobody's embarrassed, Lou. A person forgets, or there are unavoidable circumstances. This happens. We're not unreasonable. Now, if you care to clear up this little FHA payment of \$40.50, plus the late charge of \$2.50, there's no problem. Your credit rating is top-drawer with us. We couldn't ask for a better customer. In fact, I personally will recommend to Mr. Dell, our president, that all your delinquencies be wiped off the books — wiped right off, so there's no blot whatsoever on your account."

Lou, more confident, smiled through a cloud of exhaled smoke.

"That sure is fine, Mr. Briese — Bill. That's very generous of you. To show you I appreciate it I'm going to — well, reciprocate. I'm going to pay my account in full."

Breezy Bill sat up straight and put out his cigarette. "Well, of course — if you wish. Certainly there'd be a saving in interest charges. But there's also the consideration that you don't want to leave yourself short of ready cash —" His eyes drifted to the duffel bag. "You mean one of the FHA loans, I suppose?"

"Both of them," Lou said. "The thousand-dollar one for the back bedroom and the twelve-hundred-dollar one for the upstairs bathroom. I'm three-quarters of the way through the five-year one and about halfway through the 30-month one."

"There's absolutely no hurry at all," Bill said, and Lou could tell that he was saying it sincerely.

"Except that I have the money —" Lou gave the duffel bag a friendly kick — "and there is that fat interest rate —"

"We're delighted to carry you, Mr. Aramis — Lou — delighted."

But Lou Aramis said: "I have the cash, Mr. Briese, and I prefer to pay the whole thing. I owe you \$487.76 on one and \$445.50 on the other. That's \$933.26 on both. I'd like to clear those up right now."

He reached into the bag and counted out a thousand dollars in soiled bills. "We'll get it exact later," he said.

Mr. Briese let the money sit

on his desk, not touching it. He looked at it with distaste, then at Lou, belatedly changing his expression to a tentative smile. "May I ask you, without meaning to be overly inquisitive, of course, how you happen to have so much cash?"

"I didn't rob a bank, if that's what you mean."

The expression of distaste returned to Mr. Briese's face.

"I'm sorry," Lou said. "I guess that wasn't funny." It wouldn't do to antagonize Breezy Bill Briese at this stage of the transaction. "What happened is that a lot of my customers came in yesterday to pay up. Some of them had owed me for years."

Mr. Briese looked dubious. "You mean they all paid you on the same day, and all in cash?"

Lou shrugged. "Yeah. I guess you'd call it a coincidence."

"I would." Mr. Briese picked up one of the bills — a fifty — and examined it, then held it to his nose and sniffed at it. "It's certainly worn," he said reluctantly.

"Legal for all debts public and private," Lou said. He was pushing it now. "That's what's printed on it, isn't it?"

"That's what it says, all right."

"And you're open for business? Money's your business, just like cars are mine, and if you don't

see anything wrong with the money, why can't I pay my debts with it? I can't eat it."

"True." Mr. Briese appeared to find inspiration. "But you could put it in a safe deposit box which I'd be glad to rent to you for eight dollars a year."

Lou started to object. Then he sat back and said, "Okay."

"Okay?" Mr. Briese wasn't prepared for such affable agreement.

"I'll rent the box." Lou picked some bills from the pile on the desk and handed them to Mr. Briese. "I'll even pay you in advance. Can I have a receipt?"

Mr. Briese took a pad from his drawer and wrote a receipt. He was smiling as he handed it to Lou. "Fine. I'll take you to the vault —"

"Not right now," Lou said. "Maybe I'll put my life insurance policy in it sometime and a few things like that."

"But I thought you wanted it for the money."

"Sure you did. But you took my cash, so it must be good. Now take my \$933.26 for the FHA loans. It's exactly the same principle, isn't it?"

Bill Briese surrendered. He chuckled. "You win, Lou. In the absence of any directives not to accept circulated currency, such as you have here, I have no

choice but to stamp your FHA accounts paid in full."

Lou handed over the two payment books. He relaxed as the vice president in charge of consumer credit tore out the perforated pages and stamped PAID on each stub.

"It's a pleasure to do business with you, Bill," he said, putting the receipted books in his pocket. He smiled at the banker. "Now about the mortgage."

"The mortgage?" Bill Briesce asked. "What do you mean, the mortgage?"

"My mortgage," Lou said. "I figured out last night that I owe you exactly \$12,427. I want to pay it off."

He reached into the duffel bag, drew out a handful of soiled bills and started to count them out on the desk. "Twenty, forty, ninety, one hundred, hundred and ten, hundred and sixty . . ."

The banker sank back in his chair. His eyes became glazed as Lou continued to count.

". . . thousand-fifty, eleven hundred, eleven-twenty — oh, look, here's what you financiers call a C note — twelve-twenty, twelve-forty, twelve-ninety . . ."

After a while Bill Briesce began to laugh. He picked up his PAID stamp and thumped it up and down on the ink pad, waiting for Lou Aramis to finish his meticulous counting.

The government acted, finally, after the aliens dropped eight hundred and thirty billion dollars, in beautifully wrought and now pre-rumpled bills no larger than fifties, over New York, Chicago, Los Angeles, New Orleans, Denver, Boston, Detroit, Pittsburgh, Dallas and Miami.

But before that happened Lou Aramis and his fellow members of the South Waterford Rumple Club had paid all their debts. They owned their houses and cars free and clear and had stocked up on everything they could buy. Bill Briesce, though not a club member, had taken a long lunch hour, raked his lawn and paid off thirty thousand dollars worth of debts before going out on his own buying spree. He'd had to resign from the bank the same afternoon after an emergency meeting of the board of directors, but he did so with no apparent regret, and by nightfall he'd rented an office down the block in which he set himself up as a currency consultant.

His new business lasted only one day because an Executive Order soon outlawed paper money altogether.

The aliens, adapting quickly, flew over and dropped coins. The Kennedy halves did the worst damage because there were more of them than of any other denomination. But there were silver

dollars galore and Washington quarters and Roosevelt dimes. The aliens dropped no nickels or pennies, which became scarce. But by common agreement people gave up making small change; prices were rounded off to the nearest ten cents.

People who were out at 3 a.m. when the coin rain fell were stunned by the din and quite a number of them were knocked unconscious by the coins themselves. Vast numbers of windows were broken.

The government outlawed all money, including checks. Trading was suspended indefinitely on the stock and commodity exchanges. All banks closed. Supermarkets and other chain stores shut their doors for high-level consultations, but enterprising independent shopkeepers stayed in business by switching to barter.

Lou Aramis went out before breakfast to rake the lawn in front of his paid-off house. He gathered the five-, ten-, and twenty-dollar bills into a pile and burned them. He raked the silver out to the driveway where it glittered in the early sunshine, prettier than gravel.

His neighbor, Jim Vernon, was also burning bills. He told Lou he was saving his coins and planned to cover his patio with them. "I'm pouring the concrete Friday night, and I'll set the coins in

then. But I'm a little short of silver dollars for the border."

Lou waved to his sparkling driveway. "Help yourself."

"Thanks."

"I've got an extra gross of eggs," Lou said. "Can you use them?" Lou's father-in-law had a poultry farm.

"I sure can," Jim said. "But I don't know what I could trade. You must be all stocked up on clothes by now." Jim ran Vernon's Men's Wear.

"I am, but Susie's getting jealous. Too bad you don't carry a women's line."

"I could probably do a swap with Keegan Brothers over in Parrish. What size is Susie?"

Susie had the omelettes on the table when Lou went in. She was studying a new cookbook. "We could have souffle for dinner," she said. "Takes an awful lot of eggs."

"Sounds nourishing," Lou said. "Could you disguise it somehow?"

"I've been saving a piece of cheddar cheese. And then I heard from Mrs. Lucia yesterday that there's a chance of getting some eggplant —"

"Eggplant!" Even the sound of it bothered Lou.

Georgie, their youngest, said: "I want some corn flakes."

"You'll eat eggs," Susie told

him. "I'm keeping the corn flakes for your birthday treat."

"I hate eggs," Georgie said.

Lou, who was beginning to feel the same way, started for his car. Susie ran after him. "You forgot your lunch." She handed him six hard-boiled eggs.

In the park, where he went to eat lunch, Lou traded three of the eggs for a loaf of bread. He'd struck up an acquaintance with a baker's helper.

It was getting so that Lou automatically woke up at 3 a.m. He lay in silent darkness for a while, then heard a succession of soft plopping sounds on the roof. He pulled on his bathrobe and went outdoors. The lawn seemed to be covered with ping-pong balls. No, bigger — they were white but each was the size of a kid's high bouncer. When he picked one up it gave in his hand as a rubber ball did. Lou shook his head and went back to bed.

In the morning he was awake before Susie. He went out and threw one of the round white things against the stone steps. Instead of bouncing it smashed. A red and white liquid spilled out. In the few hours since the things had fallen their casings had become brittle, like eggshells.

Lou was dismayed. He felt his egg-based economy beginning to crack wide open.

He bent down to sniff at the thing he had smashed. The liquid had a meaty, nourishing smell.

He gathered up a handful of the spheres and took them to the kitchen. He cracked their shells and fried them in a pan; a delicious aroma filled the air. Cooked, their consistency was that of Welsh rabbit. Tasted, they were reminiscent of lobster. He nibbled cautiously at first, then ate hungrily.

The members of the South Waterford Rumble Club, to whom Lou communicated his discovery, were almost as happy with the rain of lobster meat as they had been with the alien's original money drop, and soon the entire country was enjoying free high-protein meals. Some connoisseurs claimed that the food from the sky tasted like squid.

The connoisseurs turned out to be prophets. The trouble with the alien eggs was that, if kept, they hatched out octopi. The little creatures looked just like the description of the aliens given by the man from the Fish and Wildlife Service. They had pseudopods and bright orange mandibles.

The question of whether they could be eaten after they hatched was academic for two reasons. They didn't wait around to be captured. They moved on their eight legs more swiftly than spi-

ders and were always just out of reach. In the second place, the aliens now flew over every day, punctually at 3 a.m., dropping a new batch. People soon learned how to tell the fresh eggs from the day-old ones. Off-white freckles on them indicated that they were new and edible. When the freckles faded the eggs were ready to hatch.

As the octopi grew — and they grew fast — the federal government sent troops to seal off South Waterford. But this was a futile precaution because South Waterford was now only twenty-four hours ahead of the rest of the country, and all the government got was a preview of the end.

Lou Aramis, after breakfasting heartily on lobsterlike (or squidlike) egg meat, stepped out on his lawn to gather up a few more freckled spheres. He forgot his mission when he saw a fully grown creature hanging by two of its eight tentacles from the lowest branch of his catalpa tree. One of the other six tentacles beckoned Lou closer. The intelligent eyes of the thing were appraising him.

Lou, unable to resist the bidding, went to within arm's length. He felt neither fear nor repugnance as the alien creature reached out a tentacle and laid it on his shoulder. It might have been a caress, or a dubbing to knighthood, or the gesture of a master to a worthy slave.

The alien spoke, and there were overtones which suggested to Lou that similar scenes were taking place all over South Waterford and would be repeated twenty-four hours later throughout the United States.

His particular alien said to him: "I think we can use you."

Lou knew then as surely as if it had been explained to him by the League of Women Voters, or by the President himself, that both pronouns were in the plural.

Lou Aramis felt proud. He said: "Of course we'll do what has to be done, together."

It was only natural. Outwardly he was still Lou Aramis, upright terrestrial biped. But thanks to his recent diet he was starting to think like an orange-mandibled alien squid.

—RICHARD WILSON



# KING of the GOLDEN WORLD

by ROBERT SILVERBERG

*She was earthly and human.  
Her husband was an alien —  
how alien, she never knew!*

Toward the late afternoon Elena mounted the higher peak of the double-humped island to watch the first phases of the eruption. A swarm of the children took her there — sleek, yellow-skinned fledglings, gracefully coltish, giddy with delight at the idea of accompanying the woman from Earth. They tumbled and pranced beside her as the procession ascended the mountain road, and as the group came round the spiraling cone to a place where the other peak was in view one of them said, "See the smoke, Elena? Soon there will be fire!"

He was Vondik, one of her favorites, one of the most agile, probably the most intelligent. As Elena moved to the edge of the road for a better view, the boy sidled up beside her. His cool, six-fingered hand casually encircled the bare meat of her left thigh only inches below her hip. He glanced up, and the warm greenish eyes searched her face as though to see if she disapproved of the contact. Well, of course, in the proper context — schoolboy and teacher on Earth, say — any such contact would be outrageously intimate. But this was not Earth, and Vondik

was merely being friendly. He was about nine, a couple of years short of maturity among these people. There was nothing sexual about the innocent embrace, Elena told herself.

The other children chattered and pointed at the far peak. Elena had difficulty understanding their rapid words. The onset of the eruption left them frantically excited. Like monkeys, she thought. Slender yellow monkeys growing tense before a storm.

"The fire will come," said Vondik. "And the stone will melt and pour down on everything. See? See? The fiery stone will fall on the villages and destroy all in its path."

"How soon?" she asked.

His fingers dug into her thigh. "Two sunrises. Three. Ask Hangan. Ask the chief. When you go to sleep with him tonight, make him tell you." Vondik giggled. "See the fire coming now! Do you see it, Elena?"

She stared out over the valley. The view from here was magnificent. She saw the green slopes of the other peak, and two of the three villages that had sprouted below the summit of the volcano since its last eruption, generations ago. The double-humped island was about ten kilometers in diameter, rising steeply from the dark waters of Lake Muuk. The lake was the gigantic basin

of some ancient crater, the roofless remnant of what must have been an incredible mountain. No one knew how deep it was. It was thirty kilometers across, and to the east Elena was able to see the zig-zag course of the Golden River, yellow with mountain silt. The river came from the north, slicing down out of the cold loess country to feed this crater lake. The lake had no visible outlet. Elena supposed that underground springs must carry off the daily influx of new water. The daily tons of yellow silt were lost in the depths of Lake Muuk, which remained obstinately dark, obstinately deep, no matter how much debris the Golden River dumped into it. Further out, beyond the rim of the lake, Elena saw the broad tropical savanna. Unfriendly tribes inhabited it. The people of the lake, self-sufficient, never left their swaybacked island, even though both humps were active volcanoes and the lesser hump was in an evil mood.

Once, ten years ago, Elena had seen Vesuvius: that dark ashy cone, those sinister fumaroles, the coiling wisps of greasy smoke. Touch a cigarette to the ground, and it ignited. She had gone right over the lip of the volcano and had stared into its black heart, looking down on the

death of Pompeii and shivering. Here she did not dare get so close to the crater. It was sacred ground to these people. The villages began in the valley and straggled up the slopes for hundreds of yards. Above the last houses lay a thick green belt of cloud forest, untouched by cultivation, untouchable, holy. Above that lay an ancient cinder zone, leading to the summit. When the first rumbles of the disturbance had sounded, Elena had wanted to climb the peak and evaluate the danger at close range. Haugan had forbidden that. He was not only her lover but the chief of the three villages, the King of the Golden River, and she could not disobey him. So here she was, atop the uninhabited neighboring peak, looking across the valley at the deadly mountain.

"Much dead when it blows up," Vondik said.

"Surely everyone will be a safe place by then," said Elena.

The children laughed: a shrill chorus, rising in pitch, then descending. When she had first come to this world, she had found its style of laughter intolerably strange. Now she was used to it, and it charmed her. But to laugh in the face of a throbbing volcano?

The sky was darkening. Purple, feathery puffs of cloud

drifted in from the east, from the sea, heavy with rain. Against this darker background Elena could plainly see the incandescent material shooting high in the air from the funnel of cinders across the island. There were distant hissing and roaring sounds. A fountain of cinders and pumice spurted forth, bright red, cascading down the slopes. Through her spy-lens Elena watched a shower of glowing little particles lose itself and grow dark in the wilderness of ash that bordered the summit. She trembled. How long could it be before the volcano was hurling its matter into the sacred forest on its flanks and then spewing its seed into the huddled villages themselves? How could everyone be so calm about it? The ground seemed to be shaking, even here, kilometers from danger. Elena knew that beneath this entire island, both peaks of it, conduits of liquid fire crossed and recrossed. A mighty beast was stirring far beneath her feet.

Vondik's hand was gone from her thigh, now. She looked for the boy and saw his agile, naked form high in a tree, reaching for a gleaming winefruit. He seized it and jumped; the other children caught him and bore him triumphantly to her side.

"A winefruit for you."

Apple for the teacher. She took it, touched his cheek to thank him and bit into it. The children watched anxiously. She smiled to tell them that it was ripe and delicious. Winefruits were left to ferment on the bough, but if they were left too long they were sickening. Elena felt faintly giddy as the alien alcohols attacked her metabolism. The children gambled about her. How could they be so cheerful? Their homes would be destroyed. These folk were no simpletons, no backward rustics. In their own way they were shrewd and sensitive. Yet they did not appear troubled.

Markun, one of Vondik's many sisters, capered and pointed. "Now the lightning comes!"

Darkness had fallen with tropical suddenness. The pearly sky had grown ashen, and now the pumice fountain flamed like a giant Roman candle, and above and around it hovered a black cloud of erupting gases. And in the cloud flickered white sheets of forked lightning. At first Elena thought the lightning came from the purple rain cloud she had seen earlier, but no, there was that cloud sitting on the forest like a veil spread out in the tree-tops, well below the cinder zone. This lightning had something to do with the forces being unleashed within the volcano. It crackled and danced with demonic fury.

"We'd better start back to the village," said Elena nervously. "It's late. It's getting dark."

They did not object. Whooping and leaping, they preceded her down the steep incline, waiting every few moments for her to catch up.

Elena found the downward path more strenuous than the ascent. Gravity here pulled a little less harshly than on Earth, and she was in fine physical shape, thirty years old, tight-fleshed, strong. But the mountain path was cut at a devilish angle. Going up, it asked no more than stamina, which she had in abundance. Going down, it imposed ugly strains on her slender ankles. She managed. Soon they were on level land again, crossing the gentle sway of the valley. The first houses appeared. Dinner fires had been kindled. Instead of the twenty children who had gone with her to the lookout point, Elena now found herself surrounded by fifty, a hundred, a hundred and fifty. They greeted her with piercing cries of pleasure, crowding close, lightly slapping their hands against her bare body.

It had been easy enough to get accustomed to going naked here, but Elena had never conditioned herself to the sight of so many children. On Earth,

where births were so strictly regulated, children were rare sights. Here such regulation was unknown; and, besides, this was a race that bore quintuplets as a matter of course. Elena had never heard of a litter smaller than three. Six and seven births at a time were not uncommon. And the children thrived. The air was warm and gentle, the valley fertile, the lake generous with its yield.

Boisterously the children escorted her to the Parting of the Ways.

These were all one people, one culture; yet the three villages were separated by barriers of custom and caste as high as mighty walls. Largo, the lowland village, was a farming settlement. Hulgo, at the base of the volcano, was a town of artisans and potters. Gilgo, higher on the slopes, produced the laborers who did the heavy work, the fellers of trees, the builders of houses and canoes. Elena saw no necessary reason for this arbitrary division, except that it provided an exogamic structure for these insular folk. A man of Gilgo took his wife from Largo or Hulgo; no one ever married within his home village. That kept the population mixing, at any rate. Except for marriages, there was little contact between one village and its neighbor.

Haugan, the chief of all three villages, lived high up in Gilgo. He ruled the lower two villages through surrogates; there was little real ruling to do, merely the proclamation of festivals and holidays and the occasional imparting of justice. Elena took the Gilgo road, with only Vondik, Markun and a few of the other children following her. Clammy dampness had descended on the island. She was tired now. Her breasts heaved, her skin felt sticky. She leaned more heavily on the climbing-stick Vondik had cut for her. As she entered Gilgo she paused a long moment, a lean, naked, blonde Earthwoman far from home and clad in worries and humidity.

She looked up at the smoking summit, dimly visible between the trees. A gigantic eruption cloud now towered over the peak, laced with lightning in continual flashes. It seemed to her that the subterranean rumbling was louder. She had the illusion that the air was full of minute particles of ash, and she felt grimy and soiled from them, even though a finger drawn across her chest did not produce the expected streak. She hurried onward, to the large hut that she shared with Haugan.

The king came out to greet her. They embraced solemnly.

"What have you seen?"

"Fire and smoke and lightning. Haugan, it's going to erupt!"

"Not yet. Not yet. Dinner is waiting."

He led her inside. He was taller than she — the tallest man in the village, as was fitting — and moved with such grace that she never failed to feel cowlike in his presence. Alien as he was to her, she had always responded in an immediate physical way to him, from the day she had come here, a foolish expatriate looking for illumination in the outworlds. She had not expected to become the bride of an alien.

But of course he was not all that inhuman. He had too many fingers and too many joints; the texture of his skin was strange, his eyes were all pupil, he was without hair or fingernails, and she did not dare to think much about the arrangement of his internal organs. Yet the general pattern of his body was humanoid. Evolution had come to the same conclusions here as on Earth about how a dominant mammalian species should be designed, and Haugan stood upright, had two walking limbs and two grasping limbs, carried his forehead, eyes and teeth in the same flat plane and found it convenient to cover his women with his body in the act of love. Elena had ceased to regard him as bizarre.

They squatted on the mat. Dinner — stewed meat, green wine, starchy vegetables — was served in silence by Haugan's maid Leegar. Her belly swelled with a new litter. She was six months along. Haugan, of course, was the father; it was a chief's prerogative to take concubines. The girl was shy but not at all apologetic about it. She smiled as she set Elena's food before her. Leegar seemed to be saying, "You may be the king's wife, but *I* carry the king's children!"

Elena had never quite grown used to the sight of the women, with their triple rows of breasts reaching from throat to navel. It was a sensible arrangement, considering the habit of multiple births here, but it seemed unutterably alien to her in a way that Haugan's minor aliennesses no longer did. The feeling seemed reciprocal. When they lay together at night, Haugan's hands often came to rest on the flat, taut drum of her chest as though in unending wonder at the absence of the lower four breasts.

Haugan said, "You aren't hungry?"

"The volcano frightens me, Haugan."

"God in his time sends all blessings. We are prepared for what may befall."

"But I saw it clearly," she said.

"It's like a bubbling caldron. At any minute, it might bury us in lava."

"The priests are keeping watch. The lava will not come for several days."

"Several days! But —"

She hesitated. Often, she found herself lecturing or haranguing him, slipping into the role of the educated Earthwomen telling the native chieftain what the universe was all about. But she hated that facet of herself. This was his world, his island, his kingdom; and it was folly to imagine she was superior to him merely because her civilization had interstellar ships and his made pottery from coils of clay.

"What do you suggest?" he asked quietly.

"I don't know. It only seems sensible —"

"Tell me."

"— to start evacuating the three villages. Move everybody across to the other mountain. We're just sitting here under the crater waiting to be killed."

"There is time to evacuate."

"Haugan, there are thousands of people — the domestic animals, the tools, the furniture —"

"We will not leave so quickly."

He poured more wine for her. Elena drank and grew giddy. Haugan remained calm — insanely calm, she told herself. He

was like a rock, steady, assured of all he did. In every decision, from judging a paternity dispute to ordering the flight from the eruption zone, Haugan seemed equally unhurried and equally confident, a true king.

When the meat was gone, they went outside and walked through the village, king and consort, hailed by all. From the promontory on the eastern slope they studied the volcano above them. The eruption cloud had grown greater, as had the flaming fountain coming from the heart of the cinder cone. Now it seemed that the angle of that Roman candle had changed, dipping to point to the west. Elena saw the red reflection sprawling like a bridge across dark Lake Muuk. Every few minutes there came small booming explosions from above. Steam and black ejecta spurted high and fell back. The air had a singed smell. Elena looked at her arm and found a coating of fine ash trapped in the golden down on her skin. She showed it to him. Haugan stroked her body and murmured, "You have the soft fur everywhere on you. Not only here and here and here. Except for a few places, your skin has the light strands of fur all over. Wonderful!"

"Haugan, you've noticed that before. I'm showing you the ash, now. The air's full of it."

"Yes. And it will get worse."  
He did not seem to care.

Later, several old men came to see him. He sent Elena inside and squatted with them before the hut. They talked more than an hour. Elena could not understand their words — the old men spoke in thick mumbles, and Haugan replied in whispers — but now and again she seemed to sense sharp disagreement. Something the oldsters said made Haugan angry, and she heard him snap sarcastically at them. The conclave broke up at last. He came in and lay down beside her on the sleeping-mat.

"What did they want?" she asked.

"To talk about the volcano. To make plans."

She said suddenly, "Haugan, do they blame me for the eruption?"

"You? Why should they blame you?"

"The king has taken a wife from another world. Maybe they think that was sinful and is bringing destruction."

"If they thought it was sinful, they would never have allowed the marriage."

"I know some of your people objected to it."

"Elena, you know we must marry outside our village. It is the rule."

"Outside the village, yes. But to bring in a woman from a different world — "

"You fill your head with wrong ideas," he told her. "Is this some imagining of your own planet, that it is an evil omen for the king to marry a foreign woman? Here it is acceptable. Necessary, even. The more foreign, the better. And you are the most foreign. No one blames you for the fire overhead, Elena. I swear to that."

She was not soothed. Obscurely she believed that the old priests held her guilty for the impending disaster. No one had voiced even a hint of such a feeling to her, but she could not shake the notion away. It was too easy for her to think in glib anthropological terms. The exogamic exchange of women here had significance for her as the passage of unspoken messages between tribal groups; the women who embodied those silent messages were units of economic, biological and symbolic significance exchanged in a manner which kept the general structure — the meaning — of the island society coherent and dynamic. Haugan had incorporated her into that structure. But what was the unvoiced message that she carried, if not one of doom and destruction? The islanders did not marry mainland

women, despite the rule of exogamy. Was it not a blasphemy for Haugan to have married an alien? Elena could not shed her sense of guilt.

**I**n the morning she saw that the cataclysm had not yet arrived. But it was closer. Now, periodically, the crater belched steam and pumice. A thin steam cloud hovered over the lake. At the summit, the cinder cone seemed to have grown by at least a dozen meters since the previous afternoon. It rose precariously higher on the lakeward side than on the valley side, and about midday some new convulsion split the higher shoulder, breaching it to form a horseshoe-shaped rim. A dribble of clinkers became a talus slide reaching toward the upper margins of the forest. The forest itself was dingy with an overlay of ash, and every gust of wind now brought light drifts of debris into the village.

Among the people of the Golden River villages, life seemed to go on as it always had.

The men felled trees and hewed them into canoes. The women tended their babies. The children played. In the lowlands, the harvest continued. No one acted alarmed. Haugan was away most of the day, conferring with priests and elders in the official huts at the upper end

of the village. Elena momentarily expected the evacuation order to come, but it did not.

Darkness was early that evening. The sky was so clotted with ash that it would not let the late sunlight through.

There was feasting after dark. Elena eyed the pillar of fire above the village. It seemed to her that she could feel bursts of hot steam on her nakedness, the exhalations of the monster. Soon would come a vomit of steamy mud, and boulders of pockmarked tuff, and then the devastating river of lava.

That night Haugan occupied himself making lists on sheets of bark. He had no time for Elena. Throughout the night he conducted interviews in low muttered tones. At last he seemed to be showing some sense of an emergency, but only he and his coterie of withered priests appeared at all involved with the gathering force of the eruption, and even they were calm. She was the only one to feel fear.

Now it was the third morning since the rumblings and roarings and hissings had begun. Through the ash-clouded sky the sunlight looked sickly and strained. Small explosions were coming every five minutes. A layer of ash covered the village lightly.

Haugan said, "Come with me to bathe, Elena."

She was glad to get out of Gilgo and put more distance between herself and the growling volcano. Together they journeyed through the lower villages and to the shore of the lake. They both were grimy, though his smooth body had retained less of the ash than hers. The water was serene, but when Elena touched it she drew back, hissing at its warmth.

"It's boiling, Haugan!"

"Not yet. We can still enter it." He waded out, hip-deep, and beckoned to her. She stepped into the shallows again. Once in Japan she had taken a bath that she was certain would scald her; this was at least as hot. Yet she forced herself forward, until the water swirled up about her loins, and knelt to submerge her body to the chin. The mud underfoot was voluptuously warm. She dug her toes into it to hold back the pain. Haugan, beside her, ran his hands over her as if to scrub away the grime. She did the same for him. After perhaps five minutes they rushed from the water, cleansed. Her skin was puckered and unnaturally pink; his appeared unchanged.

Standing by the shore, Elena looked to her left, toward the smoldering volcano, and then to her right, at the quiescent taller peak. Why were there no vil-

lages on the other mountain? It was not holy; beasts were tethered there, children roamed it, but no one lived there. The Golden River folk all clustered about the lesser peak, and she had never thought to ask why. Over there, a close-packed jungle covered everything, except for the roads and the grazed places and the ancient coating of cinders at the very summit.

The volcano howled. Elena heard a new, more ominous sound: a high-pitched whistling. The sound of the demon about to break loose, she wondered?

She clutched at Haugan. "Let's go back. You've got to order the people out of the villages!"

"Do I have to?" He sounded amused.

"They'll die when the eruption comes."

"Yes," said Haugan easily. "Some of them will die. Some will not."

Frightened, baffled, she stared at him without comprehension.

It can't be long now," she said. "Perhaps by this afternoon the lava will come."

"Sooner than that," said Haugan. "Within the hour, Elena."

"How do you know?"

"I know."

"And the people — your people —"

"Those who are to be spared are already departing. Look."

She followed his arm, and Elena saw the dark line of the road that led through the valley to the slopes of the far peak. Like ants, at this distance, were the moving villagers, the procession of people laden with belongings and pets. She let out her breath in relief. So the exodus had begun! She watched the thin line for a long moment. But then, turning to glance up at the villages, she saw many people at work still, heedless of the gathering danger. She did not understand.

"If there's only an hour left," she said, "why aren't they leaving too?"

"They stay," said Haugan. "Only a few will go to build the new villages. Our numbers have grown rapidly, as always, and there are too many of us. I have chosen those who will go across the island. This is not the first time."

"Not the first — "

"The Night of Fire comes in each fifth generation. Each mountain must cleanse itself of the villages on its slopes, each in its turn. We build again and go on."

Haugan smiled, and as she quivered in confusion he took his hands in hers and pressed them tight. "I have duties to perform now. You may watch them, Elena."

She followed him along the shoreline to a place where the water lapped up against the shoulder of the volcano itself. The vegetation here was limp from the new heat of the lake. Elena saw a scar in the forest, a huge ditch leading from the beach to the edge of the mountain. She knew that men had come down here to work in recent months, and now she saw what they had been doing. Haugan walked inland a short distance. Elena saw that the ditch terminated in a barricade of logs, securely tethered to form a kind of sluice-gate. The warm water pooled at the gate and did not pass it.

Haugan knelt. He scooped warm mud and rubbed it on his body. He uttered words in a language she had never heard before. He gestured at the distant quiescent peak.

Then to her he said, "Within the mountain is fire. When the water of the lake meets the fire, the molten lava comes forth. This is the gateway of the lake. Now I must open it."

He seized a sharpened stake. Elena said, "You mean the lake water gets access to the volcanic conduit through this opening?"

"Yes."

"And you're going to lift the barricade?"

"Yes," he said, and thrust the

stake into the withes that bound the sluice-gate.

It was cleverly contrived. Haugan slashed in half a dozen places, and the great door of logs swung back on unseen pivots. Stunned, Elena gazed upon darkness within the mountain. She could not see the fires that lurked in the volcano's bowels; she saw only blackness, the blackness of total night, and another blackness of a race that would commit suicide for reasons of rite, and she swayed and nearly toppled. Haugan caught her. She peered down that black tunnel as the rushing waters of the lake sped past her, arrowing to the core of the mountain, there to hurl themselves upon roiling magma and spark the final convulsion of the eruption. Panicky, she struggled to flee, but he held her easily, and in that moment his skin against hers seemed unbearably alien.

He released her when she grew calm.

"Now we go back to the village," he said.

"To join the escaping people?"

"No," he said. "The king remains behind."

They hurried up the slope. Dimly Elena perceived the rhythm of it, the two volcanoes, the alternating village sites, destruction visited upon one while

the chosen flee to the other, the new village rising while the old is engulfed, the cyclical rite of purification, perhaps the cure for overbreeding, the ritual sacrifice of the king, the deliberate goading of the volcano. No wonder the other mountain was unsettled; beneath its forested slopes lay the ruins of who knew how many villages of the past, and now a new one would rise. Her mind whirled with interpretations and theories. But she did not understand. This was suicide.

Now they entered the village of Hulgo and hurried through it to the village of Largo. Past them streamed the refugees, unhurried, unafraid. Those whose lot it was to remain smiled and waved to the king. A terrible tremor of agony came from the volcano and shook the island.

They reached the hut that was Haugan's dwelling. The old men were waiting there. They looked pleased.

"You see?" Haugan said. "This has nothing to do with you, Elena. You brought no curse to us. This is a blessing upon our people."

"A blessing? To die like this?"

"It is our way. You may go, Elena. Save yourself. There is still time."

She gaped at him, bewildered. She understood little of this, for she was caught up in something that was not human in its origins,

and Haugan was right: this was not her way, she could never understand. She was of another world. She had tried to become part of this world, but it had all been merely a pose.

Yet she was his wife.

The sunlight was blotted out, though this midday. The island groaned. Elena imagined her naked body entombed by a sudden swift rush of lava. The priests chanted softly.

A plume of flame split the sky.

Vondik and his sisters ran by, exhilarated, ebullient. "Now comes the fiery rock!" he yelled.

"We'll see it soon!" They were gone . . . but not to flee.

Elena looked into a darkness beyond her comprehension, and in that darkness she saw only one thing to cling to: that these were her people now, and this must be her way. Was this her ultimate pose? Or was it her first and last true act? She did not know. She did not care.

"Will you go?" Haugan asked.

"How can I leave you?" she responded.

Embracing her husband, Elena waited for the Night of Fire to begin.

— ROBERT SILVERBERG



## FORECAST

Had a letter the other day that said, "What happened to some of the great writers you used to have in *Galaxy*? I miss Simak, Aldiss, Sheckley, Damon Knight, Laumer and others; can't you get them back?"

Dear lady (we think it was a lady; the signature was blurred), as a matter of fact, we can. Try the next issue for instance:

*Street of Dreams, Feet of Clay* is a Robert Sheckley novelette — and a funny one, we promise. In *Total Environment*, Brian W. Aldiss builds you a world in miniature — and populates it with some of the strangest human societies in recent sf years. And Keith Laumer is also present, with a novelette called *The Big Show*.

Poul Anderson will be with us again, too, with a complete short novel called *Tragedy of Errors* — along with, of course, Budrys, Ley and as many others as we can fit in.

Damon Knight and Clifford D. Simak? Well, with a little luck we expect to have them in the next issue . . . .



**for  
your  
information**

**BY WILLY LEY**

## **ASTRONAUTICS INTERNATIONAL**

**W**ould you like to see a nice Italian satellite launched by an English-French-German rocket? Or would you prefer to see an overweight French satellite launched by a Russian super-booster? Or maybe a German satellite put into orbit by an American rocket?

These three items are not fan-

tasy or wishful thinking. They are not even just possibilities — they are actual *projects*! The first of the three is the *Europa-1* project of ELDO, due around the latter part of 1968 or early in 1969. The second will be the result of an agreement signed by France and the Soviet Union early in 1967; and, unless political developments interfere, it will become reality in 1970. The third one is the result of general NASA policy and is likely to happen in 1968.

Astronautics got under way a dozen years ago by way of American and Russian efforts undertaken in the spirit of a grim (but primly denied) competition, but it has quietly grown international during the last few years, as had been predicted even then. Of course one could only predict that a kind of internationalization would take place; one could not have foreseen what form it would take. The first steps toward internationalization came from three different sources: one was an idea harbored by three German space-travel enthusiasts, the second were the needs of the American space program and the third consisted of the very simple fact that the European nations are smaller than either the USA or the USSR and could hope to compete in space only by forming a union of some kind.

Let us begin with the idea of the three Germans. They were leading men of the new German Rocket Society that had been formed after the war. One was its president Heinz Gartmann, an aeronautical engineer (who died of a heart attack about ten years ago), the other two were Dr. Gunter Loeser, aerodynamicist and expert on turbulence (he died in a helicopter crash in the United States while engaged in the investigation of low-level turbulence), and H. H. Koelle, an engineer who then worked in Huntsville for a number of years and is now Professor of Astronautics in West Berlin. The three reasoned as follows: we have here a society devoted to astronautics. There are societies devoted to astronautics in other countries. Why don't we try to get together for international cooperation? It might do something for all of us.

Then still thinking in terms of Europe only, they wrote to the British Interplanetary Society in London and to the Groupement Astronautique Francaise in Paris. The director of the latter, Alexandre Ananoff, became enthusiastic and organized the First International (European only, though) Congress for Astronautics. It took place in Paris in September of 1950 and was attended by representatives of astronautical so-

cieties from Austria, Denmark, France, West Germany, Spain, Sweden and the United Kingdom. A transatlantic note was furnished by the presence of Professor Teofilo M. Tabanera of Argentina.

The first congress just decided that such an international organization was desirable, and it laid the groundwork for the organization. At the second congress in London in September 1951 — organized by the British Interplanetary Society — the International Astronautical Federation (IAF) was established. During the third congress in Stuttgart (1952) the constitution was formally adopted and the IAF was registered in Baden, Switzerland, under Swiss law. It has been going strong ever since, with a congress every year in a different country, usually the capital of that country.

This was one step in the direction of internationalization.

The second step, as has been said, grew out of the needs of NASA. NASA was preparing for the Mercury manned spaceflight program in 1958, and that meant that tracking stations had to be established all around the world, in Africa, in Madagascar, in Australia, India and Japan. At the same time the International Geophysical Year was under way, and one of the goals was the explora-

tion of the upper atmosphere. The United States made an agreement with Canada for firing sounding rockets from Canadian soil. The rockets were American Aerobee rockets and also solid-fuel sounding rockets consisting of a solid-fuel Nike booster and a smaller solid-fuel rocket as an upper stage. Once the idea of firing American upper-atmosphere-sounding rockets from a non-American site had taken hold it could easily be expanded to include other nations. The Canadian firing site was as far to the north as could be conveniently managed — the main reason for the choice of Fort Churchill was that it was the northernmost point in Canada that could be reached by rail. Now a firing site as close to the equator as possible was desired, and India offered the use of a stretch of land near its southern tip which became known as the Thumba range.

The working arrangement was the same with all other countries. The United States, via NASA, furnished the rockets and, if necessary, instruction; the other country furnished the firing site, tracking facilities as required and personnel. No exchange of funds took place. Under such an arrangement sounding rockets were fired from New Zealand and from the Andoya range in northern

Norway. Of course American rockets were also fired from the Chamental range in Argentina, about 150 miles from Cordoba.

But, while there was never an exchange of funds, there soon came to be an exchange of rockets. In February, 1967, Indians from the Thumba range arrived in the United States with an Indian-built instrument package which was launched successfully from Wallops Island on March 16, 1967, using a two-stage Nike-Apache rocket. One year earlier a Japanese group had come to Wallops Island with a Japanese single stage solid fuel called the MT-135, about 10½ feet long and weighing 150 lbs. at launch. The Japanese rockets carried meteorological instruments to a height of 35-38 miles; they were paired with American solid-fuel Arcas rockets that reach about the same altitude. Each time a Japanese MT-135 took to the air, it was followed by an Arcas 15 minutes later.

Since the international arrangements about sounding rockets worked out so well, why not extend it to satellite launchings? The first two countries to take advantage of this possibility were the United Kingdom and Canada. Artificial satellite UK-1 was successfully launched on April 26, 1962, and the first Canadian

satellite *Alouette* ("Skylark") followed on September 29, 1962. Since the Canadians wanted a nearly polar orbit the launching was done from the Pacific Missile Range. Both the first British and the first Canadian satellite required a Thor rocket with an extra upper stage, and at that time the Thor was still a military missile that was classified in part. Hence the firings had to be from United States Territory and a certain amount of security complications was inevitable.

But by that time there had been inquiries from other countries whether the United States might not sell them a rocket for scientific purposes. The West Germans even wanted to buy an Atlas rocket with an Agena as the upper stage for an ingenious but heavy satellite they had designed.

Of course, no military missiles could be sold, but meanwhile NASA had developed a rocket that was not classified, the Scout. All four stages use solid fuels. The first stage is an Algol by Aerojet-General, with a thrust of 115,000 lbs. The second stage is a Castor by Thiokol, with 55,000 lbs. thrust. The third stage is an Antares by Hercules Powder with 13,600 lbs. thrust, and the fourth stage is an Altair (also by Hercules) with 3,100 lbs. thrust. Add guidance by Minneapolis-Honeywell, and you have a 72-foot rock-

et with a take-off weight of 36,600 lbs. that can carry a 110-lb. payload to an altitude of 3,500 miles or put a 150-lb. payload into orbit.

This is the rocket that was made available to other powers for launches from U.S. launch areas or that could even be sold for launches elsewhere. But while the English were satisfied to have their satellites launched in the United States — and the West Germans will bring over a satellite of their own for this purpose soon — some other nations had higher ambitions.

The Japanese, in 1955, decided on a program of their own, beginning with a small solid-fuel rocket they called Pencil because it was only 11½ inches long. Pencil was followed by Baby which had two stages but a total propellant weight of only 2.2 lbs. Then followed a 4-foot rocket and then followed a series that had the overall designation of Kappa. With one exception they were two-stage rockets, and all of them were solid-fuel rockets.

Kappa - 6, with a take-off weight of 595 lbs., reached a peak altitude of 37 miles in 1958. Kappa-6H, in 1960, had take-off weight of 727 lbs. and reached a peak altitude of 50 miles. Kappa-8L, in 1962, weighed only 50 lbs. more but climbed to 100

miles. Kappa-9M, in 1963, weighed 3,300 lbs. on the pad and carried a payload of 110 lbs. to 217 miles. Of the next set of sounding rockets the two-stage Lambda-2 carried a payload of nearly 400 lbs. to 310 miles in 1963, and the three-stage Lambda-3, in 1964, carried 375 lbs. of payload to 375 miles.

By that time the Japanese were ready to build a satellite launch vehicle — and their whole space program, up to that point, had cost them only 25 million U.S. dollars.

The satellite launcher was called Mu-2, had four stages and carried a 57-lb. satellite. The launch date was September 26, 1966, and the take-off looked fine. But the top stage failed to ignite, and the satellite fell somewhere into the Pacific Ocean. But by the time this column appears in print, the Japanese might have succeeded.

While the Japanese produced a very thrifty space program, the French were after a diversified rocket and space program. Of course they were thrifty, too, in an interesting manner as we'll see soon, but they did not permit the budget to curtail success. After preliminary studies and presumably extended debates, the French created two "families" of rockets, the *Belier* family (*belier* means "ram," the animal as well

as the medieval battering ram) and the so-called "gem family." With the single exception of one of the "gems," the *Emeraude* ("emerald") they are all solid-fuel rockets.

The *Belier* family takes its name from the fact that the *Belier* rocket is the top stage for all rockets of this family. The *Belier* has a length of 13 feet 2 inches, a diameter of 12.0 inches, a launch weight of 694 lbs. and a burning time of 21 seconds. Fired by itself it can reach an altitude of 50 miles. The next bigger rocket of this family is the *Centaure* which carries the *Belier* as its second stage. Overall length (including the second stage) is 19 feet 9 inches; the diameter is an inch less than that of the *Belier* and the overall take-off weight is 1,030 lbs. Fired with a *Centaure* to boost it, the *Belier* reaches an altitude of 80 miles.

Next is the *Dragon*, also carrying a *Belier* as its second stage. The overall length (with *Belier*) is 23 feet 3 inches, overall take-off weight is 2,550 lbs., and the peak altitude for the *Belier* when boosted by a *Dragon* is 250 miles. But one can continue with this game, and the French did: they built a lower stage called the *Pégase* (Pegasus) to carry a *Dragon* that carries a *Belier*. The overall length of this three-stage rocket is 33 feet 11 inches, over-

all take-off weight in 4,512 lbs., and peak altitude for the top stage is 600-630 miles.

In the "gem family" we have the same careful regard for combinations. There are four basic rockets.

In the liquid-fuel *Emeraude*, the oxidizer is nitric acid and the fuel proper a turpentine derivate named terebenthine. None of the figures for the *Emeraude* one can find in French magazines seem to agree among themselves; the reason is that an *Emeraude*, to be testfired, has to carry dummy upper stages and the figures sometimes refer to the rocket with these dummy stages and sometimes they do not. The *Emeraude*, by itself, is 32 feet long with a diameter of 4.4 feet. Weight empty is 4,290 lbs., weight fully fueled is 32,380 lbs. and take-off thrust is 59,700 lbs.

The smallest of the four basic rockets does not seem to have a name, it is always referred to as the "third stage." It is 6½ feet long, has a diameter of 26 inches and an empty weight that is surprisingly low, namely only 150 lbs. But its propelling charge weighs 1,410 lbs.

The two rockets *Agate* and *Topaze* are fairly similar in their dimensions but different in construction. The *Agate* is 28 feet long, the *Topaze* 25¾ feet. Both

have a diameter of 31½ inches. At take-off the *Agate* weighs 7,500 lbs., the *Topaze* 7,500 lbs. But the *Agate* has only one exhaust nozzle and a burning time of 18 seconds, while the *Topaze* has four exhaust nozzles and a burning time of 39 seconds. So these are the basic rockets of the gem family, *Emeraude*, *Topaze*, *Agate* and "third stage." What follows should be (but isn't) called "jewelry" — because now the gems are combined.

This is the scheme:

*Agate* + "third stage" = *Rubis*  
*Emeraude* + *Topaze* = *Saphir*  
*Emeraude* + *Topaze* (= *Saphir*) + "third stage" = *Diamant*.

*Diamant* is the French satellite launcher with an overall length at take-off (including the satellite) of 62 feet. But the first French satellite was launched in the United States by a Scout rocket, then the French went ahead and put three satellites of their own into orbit (see table).

When the French rocket program began, Algeria was still French, and so the French established a proving ground in the Sahara near a place called Hammaguir. I have read somewhere that this is a native word meaning "javelin thrower", — I find this coincidence (if it is one) a

bit too pat, but of course I can't say that Hammaguir does *not* mean javelin thrower. But the French, who then leased Hammaguir for a number of years, had to leave on June 30, 1967, so at the time *Diamant* went into action, Hammaguir was headed for the last countdown.

As a result, the French, during 1966, have been busy constructing two new firing ranges, one for satellites in Guiana and one for missiles with ranges up to 1,200 miles on the French west coast, halfway between Boulogne and Biarritz.

One of the last French rockets fired from Hammaguir was a two-engined single stage rocket called *Cora* which has nothing to do with the *Belier* family and the "gems" but is destined to be the second stage of the *Europa-I* satellite launcher of ELDO. The letters stand for European Launch Development Organization, and ELDO is the result of the third reason for internationalization mentioned at the beginning. ELDO was first proposed in 1960 by the United Kingdom and France and formally organized in 1964 with the following members: Belgium, France Germany, Italy, the Netherlands and the United Kingdom. The seventh member, Australia, does not contribute funds, but makes its Woomera firing range, tracking facilities

# THE "INTERNATIONAL" SATELLITES

(All launched from U. S. Firing Ranges except as noted.)

Launch Date	Satellite Designation	Satellite Design	Launch Vehicle	Perigee (miles)	Apogee (miles)	Orbital Period. (minutes)
Apr. 26, 1962	UK-1	British <sup>1</sup>	U.S.	242	754	95
Sept. 29, 1962	Alouette-I	Canadian	U.S.	597	619.4	190.5
Mar. 27, 1964	UK-2	British	U.S.	186.4	825	101.2
Dec. 15, 1964	San Marco I	Italian <sup>2</sup>	U.S.	128	510	95
Nov. 26, 1965	FR-1	French	U.S.	329	1123	108.7
Nov. 28, 1965	Alouette-II	Canadian <sup>3</sup>	U.S.	315	1863	121.4
Feb. 17, 1966	D. 1A	French	French <sup>4</sup>	311	1701	118.7
Feb. 8, 1967	Diadème 1	French	French <sup>4</sup>	354	775	104.3
Feb. 15, 1967	Diadème 2	French	French <sup>4</sup>	367	1168	110.2
Apr. 26, 1967	San Marco II	Italian	U.S. <sup>5</sup>	135	498	95
May 5, 1967	UK-3	British	U.S.	306	373	95.6

<sup>1</sup> The three British satellites are also known as Ariel 1, 2 and 3.

<sup>2</sup> Launched from Wallops Island by an Italian launch crew, San Marco I re-entered the atmosphere and burned up on September 13, 1965. All others in this table are still orbiting.

<sup>3</sup> The same rocket also launched the American satellite Explorer-XXXI.

<sup>4</sup> Fired from Hammaguir, Algeria.

<sup>5</sup> Fired from floating platform in Indian Ocean.

and personnel available to the other members.

While ELDO's goal is the development of a launch vehicle, its sister organization ESRO (European Space Research Organization) has a more varied program and has, for that reason, several sub-divisions:

**ESDAC:** European Space Data Center, located in Darmstadt, West Germany,

**ESLAB:** European Space Research Laboratory, located in Noordwijk, The Netherlands,

**ESRANGE:** European Space Range (for sounding rockets) located near Kiruna, Sweden,

**ESRIN:** European Space Research Institute, located at Frascati, Italy,

**ESTEC:** European Space Technology Center, located in Noordwijk and Delft, The Netherlands.

**ESTRACK:** European Space Tracking Network, with stations in Norway, Spitsbergen (Svalbard Archipelago), Port Stanley (Falkland Islands), Redu (Belgium) and Fairbanks, Alaska.

ESRO has three satellites being built, ESRO-1 by a French company, ESRO-2 by Hawker-Siddeley in England and Heos-A by Junkers Aircraft in West Germany. All three will be

launched by American rockets and presumably from American firing ranges, ESRO-1 and ESRO-2 will be orbited by Scout rockets, while Heos-A will need the rocket called TAD, which means "thrust-augmented delta." The schedule calls for launching all three of them during the latter half of 1968. (Though late word from NASA indicates one may launch early — perhaps while you are reading this). The rockets for the ESRO satellites will not be furnished free of charge, but will be purchased by ESRO.

ESRO's membership is exclusively European and is larger than that of ELDO. Ten nations are members, namely Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland and the United Kingdom. Norway and Austria are not members but have what is called "observer status."

As has been mentioned ELDO's main goal is the development of a satellite launch vehicle, larger and more powerful than France's *Diamant*, — but in the meantime the French are planning a "super-*Diamant*." The *Europa-1* rocket of ELDO will have an overall length of 104 feet, a maximum diameter of 12 feet and a launch weight of 230,340 lbs. It will be capable of placing a 2,200-lb. payload into a 125-mile orbit, or a 1,900-lb. payload into a 310-mile

orbit. The booster stage is the British *Blue Streak* that was originally developed to be a missile with a range of 2,800 miles.

As part of the *Europa-1* the *Blue Streak* has a length of 61½ feet, a diameter (tank section) of 10 feet and an empty weight of 15,425 lbs. Fully fueled (with kerosene and liquid oxygen) it weighs 197,110 lbs., the take-off thrust is 289,400 lbs. but rises near the end of the 156-second burning period to 333,500 lbs. The second stage is the French *Coralie* which is designed for unsymmetrical dimethyl hydrazine as the fuel and nitrogen tetroxide as the oxidizer. *Coralie* is 187 feet long with a diameter of 6.6 feet and an empty weight of 4,627 lbs. Fully fuelled, *Coralie* weighs 26,222 lbs. and develops a thrust of 61,800 lbs.

When the *Coralie* was tested at Hammaguir it had to have all kinds of things added to it that it does not have as part of the ELDO vehicle. It had to carry a dummy upper stage and a dummy satellite. It had to have a nose cone that it normally does not have. And it had to have tail fins. Because of these additions the French called the test vehicle *Cora*; it reached an altitude of 37 miles.

The third stage of the ELDO vehicle is being built in West Germany, designed for the same

fuels as the *Coralie*. It is 10.8 feet long with a diameter of 6.6 feet. Empty weight (but with guidance equipment) is 1,345 lbs., fully fuelled it weighs 7,430 lbs. The thrust of its main engine is 5,070 lbs., but it also has two vernier engines for orbital adjustments and corrections with a thrust of 176 lbs. each.

Nothing is known yet about the satellite to be carried, except that it has been designed by the Italian group in consultation with West German engineers and that it will be manufactured in Italy. The orbit also has not been mentioned, but from the distribution of the tracking stations of ES-TRACK it is fairly obvious that a polar orbit has been planned.

Well, this is the story so far, like all stories dealing with rockets and with space research it is an open-end story. Five years from now the story will have another ending, but it will be an open end again.

#### The Names of the Russian Satellites

This looks like the proper time to answer a query I received some time ago, asking me to name the various types of Russian artificial satellites after Sputnik and to explain their purpose, if possible.

Not counting the devices called "cosmic rockets" (we'll get to

them later) the first Russian satellite that bore a name other than Sputnik was *Polyot* in 1963. The word means "flight" and is pronounced pol-YOTT; the purpose of the satellite was to demonstrate that an orbiting satellite can change its orbit. *Polyot* did demonstrate this by raising its apogee from 368 to 892 miles and its orbital period from 94 minutes to 102 minutes. The perigee remained virtually unchanged; it was raised from 210 to 213 miles.

In 1964 there came four satellites called *Elektron*. They were fired in pairs, two on January 31 of that year and two on July 11 of the same year. The first two assumed orbits from 250 miles (perigee) to 4,423 miles (apogee) and 363 miles (perigee) and 42,152 miles (apogee). The Russians just stated that these were "research satellites," but from these orbits it is evident that the *Elektron* satellites were monitoring the extent and intensity of the Van Allen belts. The second pair of these satellites was put into almost identical orbits.

In 1965-6 there came three satellites named *Proton*; the dates were July 10 and Nov. 2 of 1965 and July 6 of 1966. Their orbits were not unusual, the first one had a perigee of 108.7 miles and an apogee of 279.5 miles, but their weights were. Normally

the Soviets do not announce satellite weights, but this time they did: *Proton-1* weighed 26,896 lbs., *Proton-2* 26,840 lbs. and *Proton-3* 26,000 lbs. Purpose was not announced, but from the announced weight western observers drew the conclusion that *Proton-1* must be a prototype of a new manned spacecraft. This conclusion was ruined by the fact that the Russians did not bring *Proton-1* back from orbit to test its re-entry capability and to examine how it had stood up. Instead they left it in orbit until it re-entered on its own (on October 11, 1965) as a result of natural orbital decay. Of course, one could still guess that the retro rockets of this satellite had failed to work. But the performance was repeated with the other two.

Four Russian satellites, so far, were called *Molniya*, which means "lightning," and they were announced to be communications satellites. The first one went into orbit April 23, 1965. The other three followed at intervals of about six months; they were presumably replacements of the preceding *Molniya* satellite after it had stopped working.

So far things are reasonably clear, but then the Russians began to call practically everything *Kosmos*. The first of these satellites was launched March 16, 1962; on May 17, 1967 one rock-

et launched *Kosmos-159* and *Kosmos-160*. Here one name obviously covers many different things. Some of them were indubitably research satellites, some were equally indubitably prototypes of manned space capsules and some are taken to have been, or to be, what is politely called "surveillance satellites".

As regards lunar and planetary probes, the names are simplicity itself. A Russian Mars probe (which failed to work) was simply called *Mars-1*, while the Russian Venus probes were called *Venera*, which is the Russian name of the planet. The lunar probes were first called "cosmic rockets." The first (January 2, 1959) was apparently fired for impact on the moon, but missed; the second (Sept. 12, 1959) did strike the moon, the third (October 4, 1959) looped behind the moon and took a number of pictures. But the next one was called *Luna-4* (again, *Luna* is just the Russian name of the moon) and so were all the ones that followed. *Luna-9* reached the moon on February 3, 1966 and was the first man-made device to accomplish a soft landing. But *Luna-10* was fired to take up an orbit around the moon (orbit achieved April 2, 1966) like our Lunar Orbiters.

—WILLY LEY

# BLACK CORRIDOR

by FRITZ LEIBER

*He was being tested, that was  
sure. But for what? By whom?  
And at what cost to his life?*



He sat hunched in a corridor head-high and about two doors wide trying to remember who he was.

He felt very weary in his legs, as if he'd been walking the corridor a long, long time.

The corridor was of a black shimmering metal cool to his skin. He couldn't spot the source of the shimmer, which dimly lit the corridor though leaving the metal black, but he was pretty sure that was a minor problem.

He heard a faint steady whining, but he thought that was minor too.

He was hunched so that his heels pressed his buttocks and his elbows his sides, while his hands and the lower half of his face rested on his knees. Like a big rangy fetus sitting up, or the corpse in an early Egyptian hole-

burial. There droned in his mind, "Naked I came into the world and naked I go out."

The corridor was literally two doors wide, for it ended ten yards away in two doors which faced him squarely. Each door had a glowing button on it and below the button a short word he couldn't quite read, though now and then he lifted his face to squint at them.

After a while he might go and read the two words, but now it seemed important to sit hunched all together, as if that helped him concentrate, and try to remember who he was.

Moreover, though he tried to keep it out of his mind, he really shrank from investigating the two doors. There was something about them that daunted and sickened him.

Instead he chased memories in the inner darkness of his mind, but they turned and fled like tiny moonlit fish from a nighttime skin-diver.

He had the feeling that he'd taken a wrong fork somewhere behind him in the corridor, and that as he'd taken that curving turn, his name and all that had ever happened to him had slipped away, as if dragged out of his mind by centrifugal force.

Maybe when he had rested a little more he should go back and find the fork and this time take the straight branch.

As he had that thought, cool metal touched his back.

He threw out his arms, and they struck cool metal, even with his back, to either side.

The movement jerked his torso erect. His head, neck, and shoulders touched cool metal too.

He scrambled to his feet and turned around. Where there had stretched an endless corridor, there was now a wall about a yard away. A black wall with no doors or door in it.

Instead of being in a corridor open-ended one way, he was in a glimmering black box ten yards long.

He realized that the faint steady whining had stopped only when it started up again.

The wall that had touched him began moving toward him very

slowly, at about the normal walking speed of an ant.

He stood stiffly erect, facing it. His arms hanging at his sides began to tremble, then his legs. His breath came and went between his teeth in little shuddering gusts. His eyes slowly converged. The wall touched the ends of his big toes, then nudged them. Without stepping back, he threw up his hands beside his shoulders and pressed against the wall.

The whining stopped, but after he had taken two more breaths, softly sighing ones through his nose, he could feel the wall begin to press back. Holding his breath and without changing his stance, he pressed harder. The wall pressed harder still and with a sudden little scream threw him back.

He saved himself from falling and then took another backward jump.

The wall's little scream sank immediately to a whine, but the whine was a little louder now, and the wall came on a little faster, like a cockroach in a hurry.

This time he readied himself carefully for the wall's approach, taking a position somewhat like that of a wrestler but also a fencer. His right leg, bent slightly at the knee, was thrust almost straight behind him, and that foot

pointed back too. His left leg was bent under him, left foot pointing straight forward. The soles of both feet, toes gripping, were planted flat on the floor, which compared to the smooth walls was a trifle gritty, firming his stance.

When the wall reached him, the box he was in being then seven yards long, he met the wall simultaneously with his spread-fingered right hand, his left shoulder, and his whole left arm doubled up clench-fisted against his chest, the left side of his head and his left knee.

The wall stopped dead. In fact, it gave back a little, or seemed to. He pressed a little harder, but it gave no more. He did not waste his strength then, but only maintained the same relatively light pressure which had stopped the wall, trying to relax as much as he dared. His teeth were lightly clenched, but through his nostrils he drew and expelled deep breaths, as a climber does before tackling a difficult stretch of rock-face.

After what seemed a long time, the wall began to push at him again. He contented himself with matching its pressure, guessing that if he put out his full strength, the wall would do the same, shortening the contest.

What point there was in pro-

longing the contest for as long a time as possible, he couldn't define, but he was sure there was one.

Naturally he was pushing at the wall to keep himself from being crushed when the glimmering black box shortened to nothing. Yet surely the sane thing to do would be to inspect the two doors behind him and escape by way of one of them, instead of pouring out his remaining strength here. But no, he had such a deep if undefined horror of the two doors that he was determined to have nothing to do with them unless absolutely forced to. Whether sane or not, the preferable course now was to oppose the wall with all his might.

Slowly his muscles began to bulge and his heartbeat and respiration to speed up, though he made himself take the same deep, even, controlled breaths. A bead of sweat stung the inside corner of his left eye. He had to keep reminding himself not to waste energy grinding his teeth and on no account to yield to the temptation to shove out with sudden violence or begin to shout curses. *I mustn't let the wall trick me*, he thought fiercely.

His muscles began to ache, his breaths were now deep snorts. He became aware of his heartbeat and felt the blood throbbing in his temples and wrists. He

heard little creakings here and there in his body, or thought he did. Despite himself, his teeth began to clench tighter and tighter.

The pain in his muscles increased. There was fire in his joints. He broke wind, and that rattled him and almost threw him off guard. He could feel the sweat trickling down his back and legs. He prayed that it wouldn't make him slip. It was running into his eyes now, so that he blinked constantly. Under his chin it pooled in the tiny cup between the bent thumb and curled forefinger of his clenched left fist.

But he knew the wall still hadn't budged him, chiefly because it was silent — no whine, no scream.

**I**n the midst of his near agony, there flashed up in his mind one sane reason for keeping up his seemingly insane struggle: the hope that a connection might burn out in the engine powering the wall, or something in it break, or its fuel run out, or the creature or creatures pushing the wall from the other side tire before he did. Then he might be able to push the wall back, even as far as the fork in the tunnel, making it unnecessary to investigate the two doors ahead.

His heart and head were

pounding now, there was a roaring in his ears, he was breathing in deep, open-mouthed gasps, his body was one flame, through his sweat-smarting eyes the wall seemed dazzling one moment, dead black the next, he felt consciousness ebbing, but still he stuck to his labor.

With a scream like a hunting leopard close by, the wall gave a mighty shove that sent him staggering back. The scream sank to a loud whine, and the wall came on at the speed of ungoaded oxen.

Though his mind was swimming and he could barely stand, and while he was still breathing in great, wide-mouthed, acid gasps, he turned at once and walked in long strides toward the two doors. And though he reeled from side to side, his legs cramping and his arms hanging like fiery bars of lead, he nevertheless went on tiptoe, fearing that any extra sound he made might speed up the wall.

He was burning when he started that five-stride journey. When he finished it he was shivering and the sweat on him was icy and his teeth were chattering.

By the time he was within touching distance of the doors, his mind and body had steadied, but he still had to blink twice before he could read the short words under the two buttons.

The one said WATER, the other AIR.

With the eager whine coming swiftly closer and closer, he lashed himself to think. *Let's see, air could mean emptiness and height, a great fall. He couldn't fly, hell, he could hardly stand.*

*But he could swim. Water was necessary to life. Life came originally from the seas.*

*Yet he could also drown.*

*Acrophobia versus hydrophobia.*

As the well struck his heels and pushed him on, this time with a merciless lack of hesitation, and as he zigged a finger toward the button on the WATER door, an afterthought came to him in a flash.

*Air was also necessary to life. He still had enough water in him, even after his sweating, to live at least a day. But he would be dead without air, or his brain would be dead, in about five minutes.*

He zagged his finger to the AIR button. That door opened away from him, and he stumbled through it, pushed by the wall, and it slammed shut behind him.

He wasn't falling through emptiness, or standing in the open either, for that matter. He was simply in another section of black corridor.

He staggered forward a few

steps and then between relief and exhaustion collapsed to his knees and hands. His roaring head slumped, his eyes staring dully at the faintly gritty metallic floor while he gulped oxygen.

After a short time he looked around him. The corridor wall on the WATER-door side wasn't shimmering black metal as he had taken for granted, but must be heavy glass or some other transparent amorphous substance, for in it were small silvery fish, a few small squid jetting about, and some speeding faintly-phosphorescent veils he couldn't identify, all lodged in dark water which rose at least to the roof of that other corridor.

He congratulated himself that he'd made the right choice, even on a last-minute hunch.

By right (except that the universe doesn't recognize rights) the corridor he was in should have been halved in width, but it was as broad as before. He deduced that it had acquired extra width on the side away from the water.

He looked ahead, and there were two more doors, each with a glowing button and a short word he couldn't make out.

With a feeling of "This is too much," he sprawled full length on the floor, as if to sleep. One of his feet touched the transpar-

ent wall, while the elbow of the arm pillowing his head touched the wall opposite. He closed his eyes.

It was only then he realized that the sound in his ears wasn't the roaring and ringing in his head dying away, but the wail of the oncoming wall.

Such was his weariness and sudden fatalistic disinterest that he didn't tense, let alone jump up. He didn't even open his eyes.

Cool metal struck him along leg and side, gently but inflexibly. He let the wall roll him over twice before he resignedly scrambled to his feet. There was no sign in the advancing wall of the doorway by which he had entered. Stepping backward evenly, he swept a fingernail across the wall without hearing or feeling the faintest tick. Then he turned and trotted on to the next two doors.

They were marked FIRE and EARTH, and he punched the button of the second almost without physical hesitation, though there was the flash of a wondering whether EARTH might not be the name of a star or moon.

The main course of his nearly instantaneous reasoning had been: *Fire will kill me — and don't give me any tricky plays on meaning that there is a slow "fire" in my flesh and in all life.*

*While earth — hell, even if it packed the next corridor to the top, I could scramble my way in to it before the wall caught up.*

Tucked into that flash of reasoning there had even been the crafty though qualified deduction: *If this door opens inward like the first, there's bound to be some space behind it. Though who says doors have to obey rules? This one might slide sideways.*

The door did open inward, and he trotted through almost without a break in his step, and it slammed shut behind him.

For a moment he thought he had been cruelly tricked. The whole corridor ahead glared with an irregularly pulsing red like a forest fire.

Then he realized he couldn't smell a speck of burning or feel any radiant heat. All the flaring red was coming through the transparent wall on the FIRE-door side. There, great flames writhed crowdedly from ceiling to floor. Here, it was cool, while the floor had changed from slightly gritty metal to even cooler packed earth, the dry and faintly sour smell of which now came to him. He reached out and gingerly brushed the transparent wall. It was barely warm, but he supposed it could be double, with insulating vacuum between.

Why radiant heat didn't still come through, he didn't know.

It did not surprise him to discover that his corridor was as broad as ever and ended in two more labeled doors. Without hesitation he trotted toward them. This time he read the labels by the red glare of the flames. They were DEMONS and TIGERS.

At each word he felt a different quiver of fear. Easy enough to laugh at the concept of demons when in the midst of a wise and scientifically sophisticated civilization. Or to smile warily at tigers, for that matter, when cradling in your arms some potent energy weapon. But alone down here in this labyrinth, naked and unarmed, it was another matter.

Also the change in pace of the choice he had to make rattled him. This one had almost a fairy-tale quality. But there had been nothing of light fantasy, so far, in his experiences down here. Everything had been implacably real, especially the wall. Even demons would be real down here, probably. It occurred to him, too, that he had been lucky until now and had survived by playing hunches. The AIR door could have plunged him into emptiness. EARTH might have smothered or instantly blocked him, while he seemed to recall

creatures who could walk through fire, at least for ten yards. This time he must really analyze.

But how? His mind felt useless. He even thought of digging a hole for himself in the dirt, so the wall would pass over him. But the earth was hard as adobe.

A mounting hungry snarl made him glance hurriedly back. The wall was coming on at a speed greater than that to which he had provoked it by his all-out attempt to hold it back, and it was barely five yards away, the same distance as when he had made his split-second EARTH-choice in the last section of the corridor. It had more than canceled the time-advantage that quick decision had gained him; it had given him no credit for it at all. The wall wasn't fair!

The thoughts started as he whirled around. *Demons don't exist, are superstitious. Everywhere? Outside this red-lit tightening tomb is a universe incomprehensively vast. Somewhere there may be demons, and the mere word symbolizes a power greater than that of creatures.*

*Tigers are real. But I remember someone killing a tiger barehanded. A leopard, anyhow. But tigers, plural?*

The wall struck him. With the thought that *demons may exist and be able to kill me, but only,*

*an idiot takes on tigers, plural, where there's an alternative, he jabbed the DEMONS button and was through that door and in turn locked in by it before he could think again.*

**A**gain he believed he'd been cruelly tricked. Facing him a few yards away in the glimmering black corridor were two huge felines with silky black fur and green eyes glinting with evil intelligence. They lashed their great tails. They writhed their powerful shoulders. Their claws scraped the gritty metal floor like chalk rasping on slate. They carried their white-fanged heads low, their green eyes glaring up at him. While from their throats issued snarls louder and more menacing than that of the wall.

But at that moment the wall once more struck him. Almost before he knew it, he was running toward the magnified black panthers, his eyes squinted, his shoulders hunched.

They reared up, unsheathing their scimitar claws, fully baring their fangs, and screaming like black trumpets in a satanic symphony. To keep himself from stopping he had to remind himself: *They're not black panthers bigger than tigers, they're only demons.*

As he ran between them, he felt their hot breaths, their

bristly fur, but nothing more. Through eyes squinting sideways toward the TIGERS-door wall, he glimpsed glassed-in moonlit jungle and gliding through it, palely and darkly striped, flat-sided felines a little smaller than his demons.

Then he was facing doors glow-labeled REAL and UNREAL, while the wall, not demons, snarled at his heels.

*Last time I picked the unreal and won, he thought. Maybe I should again. But demons are only a tiny sub-branch of the small branch of the unreal labeled "supernatural beings." In the realm of the unreal is also insanity, psychosis, the innumerable delusions of locked-up minds completely out of touch with reality and lacking even internal organization, a sea of locked-in microcosms adrift and lost, never to know each other, even the nearest. While the realm of the real holds a hell of a lot besides tigers.*

He was pressing the REAL button as the wall slammed him. Then he was through the REAL door and this time running fast as he could down the black corridor toward the next pair. He kept his eyes averted from the UNREAL side of the corridor, for through its transparency he glimpsed a psychedelic churning of colors and forms, constantly

patterning and un patterning, which he sensed might derange any mind behind eyes which stared very long.

The next two doors were labeled INSTANT PAINLESS DEATH and TORTURE.

*Now they've quit playing around with me, he thought. They're slamming it at me, but good. Something's reached down deep, deep inside me and brought up the slimiest black noggin of them all.*

*Let's see, they say even torture comes to an end. Yes, in death. Why not pick painless death to start with? Makes sense. But back there I picked the real. Torture is a part of the real. While death is unreality squared, cubed and to the nth power. With torture, there's a chance of survival, with death no chance at all. Tautology.*

As the wall came screaming up behind him and he pushed the TORTURE button, he thought, *Well, at least I'm not strapped down yet, and to stop that I'll fight as hard as I pushed against the wall.*

He was in another section of corridor, all glimmering black this time, no transparent wall, and coming toward him was an anthropoid being or machine, the shape and size of a gorilla, except it had no head. It kept

swinging apart its long arms and then bringing them together, as if to embrace someone tightly, while its stubby legs planted and replanted themselves firmly.

It was made of metal and covered with sharp spikes that were stubby except for five long, curving talons ending each arm. An iron maiden turned inside out.

Choosing a moment when its arms were swinging apart, he punched it with all his might high in the center of its chest.

It slowly toppled over backwards, landed with a sharp crash, and lay there on its back with its stubby legs planting and replanting themselves in air and its long arms swinging apart and closing together, clashing the floor of the corridor each time they were parted widest.

The screaming wall struck him from behind. Choosing the next time the metal arms swung inward, he darted past the thing and sprinted to the next pair of doors, noting there was more lettering below one button than he'd ever seen before.

That door was labeled PERPETUAL SOLITARY CONFINEMENT IN HAPPY COMFORT. The other said only DEATH OR LIFE.

He thought, *Last time I opted against death. Shouldn't I do so again?*

Behind him, a scraping and clashing mixed with the scream of the wall. Of course, it was the wall pushing the spiked automaton before it.

*He thought, solitary confinement in happy comfort. That sounds like being drunk forever, without hangovers. All alone with an infinity of glorious, glowing thoughts and unending wonderful dreams.*

*But all alone.*

*An even chance at life is better than that. Any chance of life is better than that.*

With the screaming and scraping and clashing just behind him, he frantically jabbed the **DEATH OR LIFE** button and plunged out into a wide, long patio roofed by a fabric through which violet light filtered onto a smoothly tiled floor, and he stood there gasping and shaking. Behind a table nearby, a woman in the professional whites of a nurse was working quietly at some charts. When his breathing had evened out, she looked up at him and, lifting a gray looseleaf folder, said, "Hello. Here are your name and personal history, to read when you wish." After a faintly smiling pause she added, "Do you have any immediate questions?"

After a while he said, frowning, "I think I get it about the last four pairs of buttons. But

about the first two, would I have died if I'd picked water or fire?"

She replied, "I am not at liberty to answer that. There are many branchings in the corridors."

He still frowned as he moved slowly toward the table.

"Is something else bothering you?" she asked.

He nodded somewhat surlily and said, "When I punched the Torture button, I didn't really get any. There was only that witless robot."

"You are difficult to please," she replied. "Wasn't it torture enough, what happened to your hand?"

He lifted it, still balled in a fist, and studied the eight circular wounds, from which blood slowly dripped, and felt the dull pain. Then he reached for the gray folder in her hand, noting that her other was a gleaming gray metal prosthetic with eight slim many-jointed fingers like a spider's legs.

As he touched the folder he felt a surge of frantic curiosity and started to flip it open but caught himself and instead, carrying it half rolled, began to walk slowly down the patio, then more rapidly as he neared the ballustrade of gray metal marking its end.

Resting his hands on the warm

smooth rail, he looked out at the prospect dropping gently away.

In a pale yellow sky, a violet sun was sinking behind rounded hills ten miles away. Its purpling beams shone on a valley half filled with cultivated reddish fields and scarlet trees and half with evenly ranked transparent tubes, through which rushed fluids shading from pink to crimson of some sort of algae farming. Midway to the hills, beside a meandering river, was a town with irregularly spaced round pastel roofs, mostly low. Here and there he made out the figures of two-legged beasts and six-legged ones, the latter carrying their foremost limbs high, like centaurs. From some-

where came a faint piping and a fainter, complexly rhythmic drumming. It looked like a good planet.

After a while he could learn its name and all about it, just as after a while he could learn from the folder, reassuringly bulked between his fingers, his own name and what he'd feared and flinched away from into the black inner corridor which had become the black therapeutic corridor from which he'd now emerged. And after a while he could go back to the nurse and have her fix his hand, the dull pain of which was oddly reassuring.

For the moment it was enough to know he was alive and a man.  
—FRITZ LEIBER

This month in *If* —

**OCEAN ON TOP**

by Hal Clement

**ALL JUDGMENT FLED**

by James White

**ANSWERING SERVICE**

by Fritz Leiber

**WHEN SEA IS BORN AGAIN**

by C. C. MacApp

Don't miss the December *If*, on sale now!  
Voted World's Best SF Magazine Second Straight Year!

# The Red Euphoric Bands

\* by PHILIP LATHAM

*The comet threatened to destroy  
the Earth. But what possible  
difference did that make to us?*

After some hesitation I've decided to present this material pretty much as I originally wrote it, instead of recasting it in the formal type suitable for scientific publication. The trouble with scientific papers today is that they all sound as if they were written by the same person, an omnipotent individual who proceeds step by step, never faltering, to the logical outcome of his researches. But scientists are human beings; they make mistakes, act on impulses, and play their hunches, even as you and I. Certainly in my own case it would be downright dishonest to pretend otherwise, as the record will show. So without further apology here is the story of Paul

Finch. (From his soup-stained diary of 1975.)

1794, Dec. 19

I feel terrible. Thoroughly depressed and tired of life.

The regular end-of-the-year letter from the bursar arrived this morning. According to the disembodied personality who writes these missives "... Van Buren University is happy to inform you of your reappointment as Associate Professor of Astronomy at the same honorarium as in the previous year."

What makes this annual insult especially irritating is the cosy language in which it is couched. Why should they be "happy" to inform me of my reappointment?

When I know only perfectly well they'd be only too glad to get rid of me. Why an "Associate" Professor? I don't "associate" with anybody, not if I can help it at least. Why do they persist in referring my miserable little salary as an "honorarium"? Where does the "honor" come in?

Oh, well, I didn't expect a raise anyhow. I suppose I should be grateful for the privilege of being allowed to continue withering on the vine till my enforced retirement at 65. Only six more years to go now. To go *where*? With another world war practically here.

I'll bet Peabody and Wadstrom both got healthy raises. I can tell from the smug look on their homely faces. Furthermore, I know that *they* know that I didn't get a raise.

I might as well admit it — I'm in a rut. God! If I could only uncover something big again. Not much chance working on parallaxes and proper motions. Had all my luck right at the start.

I'm the discoverer of Finch 17, the nearest star to the Earth. Nobody can take that away from me. Stumbled on it by pure dumb luck. Red dwarf about 2 ly's away, half the distance of Alpha Centauri.\* Created a sensation at the time. *Fortune* magazine voted me one of Ameri-

ca's ten scientists under thirty most likely to succeed. And I believed it! Never done much of anything since. Tried hard though. Still my proper motion catalogue will be out soon, a good solid piece of work. Better than that theoretical stuff Wadstrom keeps turning out by the bale.

Jan. 11

Situation has deteriorated till war looks inevitable now. Experts predict it'll be all over in about thirty minutes. Curious thing is nobody wants war, nobody's mad at anybody else. Everybody's for love and peace. Yet we go right ahead getting ready for war.

You might expect speeches denouncing the warmongers, draft-card burning parties, protest marches, etc., like back in the 60's. Nothing like that today. Instead hoplessness and apathy prevail. People go around as if they're in a trance. I think Peabody's cracking up. He came in yesterday looking completely shattered.

"Finch, do me a favor, will

---

\* Finch 17,  $p = 1''.670$ , corresponding to distance of 0.599 parsecs or 1.953 ly's. Second nearest star is Alpha Centauri, a binary, distant 4.3 ly's, with 3rd member of system, *Proxima*, believed slightly nearer.

you? Take my Astronomy 1 class this afternoon."

Since his lecture schedule is lighter than mine this semester I wasn't too enthusiastic.

"Something wrong?" I inquired.

"It's the students."

"What's the matter with 'em?"

"Haven't you noticed? They're so quiet lately. Sit there all through the hour . . . not moving . . . staring straight ahead — "

"Is that bad?"

"— with that bewildered wide-eyed expression you see on the faces of those dummies they use for crash-testing buses and airplanes."

"Probably on some new kind of dope. Watermelon rind or pumpkin seeds."

"Finch, you're way behind the times. All that psychedelic stuff went out long ago. Never really helped. Kids had to find it out the hard way. I think that's where the trouble comes."

"Afraid I don't follow."

"If war comes they're sure to be killed. They know they'll be killed. There's no escape. They can't even escape for a little while in their minds any more."

Peabody bent closer.

"You know what I call them?"

"Haven't the foggiest notion."

"Reverse zombies," he said, in a hoarse whisper. "They're live people who think they're dead."

"Well, all right," I told him, "if it's that bad I'll take over these zombies of yours."

I thought he was going to fall on my neck.

"Thanks a million, Finch, old boy. Do the same for you some time."

He was off like a shot but I caught him at the door.

"By the way, what are you on right now?"

His face went blank.

"Let's see . . . what are we on now? Can't remember. Give 'em the moon . . . Kepler's laws . . . *anything*."

A neurotic personality if I ever saw one.

Feb. 18

You can avoid this mass somnambulism if you keep yourself busy.

Just started a program on this new Comet Ikegawa. The orbit people have appealed for observations so I thought I'd lend a hand. Remarkable object. Discovered out around the orbit of Saturn at 10 au. Can't recall any comet being picked up so far from perihelion before.

The astronomy department's a shambles. Peabody is home enjoying a nervous breakdown. Had to cancel all his classes. Wadstrom's always running around with a letter and a grim

expression. How could Van Bur-en U survive without him?

June 19

Working at the telescope on Comet Ikegawa has brought back old times, when I was still fairly young and the world comparatively peaceful. Although the war was shaping up even then if we'd had the sense to see it.

Been giving the comet 90 minutes on these new 113pan-Q plates. Had to catch it in the early morning sky. So calm and peaceful nights. Looking up through the dome it's hard to believe a bomb might come hurtling out of those stars.

Ninety minutes seem forever when you're working alone. You think of all sort of things: your first date . . . the difference between a moth and butterfly . . . how the eggplant is allied to the potato. One thing especially my mind keeps going back to again and again is that report of the American Biological Society last year in Chicago. The biologists' committee on extra-terrestrial life issued a report you could really understand, a rare event in scientific annals. The words stick in my memory.

". . . the development of a brain and central nervous system of such enormous complexity as ours was an event of

fantastic improbability. It could not happen twice. In our opinion the Earth is the only place in the universe where life exists."

Think of it! Our miserable little Earth — *the only place in the universe where life exists.*

June 23

Comet Ikegawa is brightening so fast, got a look at it in the dawn sky this morning. You can make it out even after sunrise if you know exactly where to look. Although much closer to us the increase in luminosity is due principally to the sun. We'd better do all the looking while we can, for this comet will never be back. It's a retrograde object moving in a parabolic or possibly slightly hyperbolic orbit. A "sun grazer" similar to 1965f (Ikeya-Seki), but definitely not a member of that comet group. Comet Ikegawa will encounter the Earth twice, early in September and again on November 7. It'll miss by 21 million miles in September, but the one on Nov. 7 will be real close, although just how close is hard to say. Orbit isn't too reliable. Still got some residuals exceeding a minute of arc.

July 7

Comet Ikegawa is a splendid naked-eye object now. Head shines up there in full daylight

twice the size of the moon and you can follow the tail out more than 3°, if you block off the sun with the tower on the library building.

A bright comet is an impressive sight all right. No wonder ignorant people in the middle ages were filled with superstitious fear. Looking at Comet Ikegawa I feel kind of awestruck myself.

#### August 1

If I had my way all comets would be below naked-eye visibility. Since the comet flared up so bright everybody is out gawking at it now. Some of their thinking is positively medieval! In fact, I'm beginning to wonder if we ever got out of the Dark Ages. One thing the comet has done which I would never have believed possible. It's snapped us out of our trance.

Under the constant threat of instant annihilation our lives had ceased to have any meaning. Only the present had any reality. Things happened to us. But they happened as in a dream, we moved from one event to another without purpose or conscious volition on our part.

But the comet is for real. You can see it. You can watch it move from hour to hour. It *must* mean *something*. Otherwise why is it there? First we were going to be smashed to bits. Then it

was death by suffocation from poison gas. Result is we're pestered all day by phone calls from hysterical old dames wanting to know when they're going to be asphyxiated.

#### August 3

Wadstrom has honored me with his presence. He had a yellow slip in his hand.

"Seen this telegram about the comet?" he said.

I shook my head. "I was working on the comet late last night. Didn't get here till after lunch."

His face assumed a disapproving expression as if sitting up all night with a telescope was no excuse for not being on the job bright and early next morning.

"The Pulkovo Observatory reports presence of cyanogen and carbon monoxide in the spectrum of the head and tail," he said. "Also, unidentified bands in the red and infrared."

Wadstrom always attaches tremendous importance to the spectrum of anything, probably because it's a subject he doesn't know anything about. He's an authority on tidal evolution and wouldn't know the G band from a gonorrhea smear.

"You understand this information must remain strictly confidential," he said, replacing the telegram in his coat pocket.

"Why is that the case, hmm?"

"If word leaked out about poison gas in the comet all hell would break loose."

"How awful!"

"Remember — not a word."

"My lips are sealed."

With this burden off his mind he was able to relax a little.

"There's been a press conference on the comet scheduled for this afternoon," he said. "Public's invited too. I hope we can scotch some of these wild rumors flying around."

"Good luck."

"Finch, it would be a big help if you could put a diagram on the board showing the relative positions of Earth and comet."

"When's this meeting scheduled?"

"Four sharp in Hildegard Hall."

"All right," I told him. "I guess I can manage it."

"I'd appreciate it if you could." He glanced at his watch. "Don't forget, that's four sharp."

The diagram turned out to be kind of fun. So far I'd been interested chiefly in the comet's position relative to the Earth and sun and hadn't paid much attention to its orbital elements. Now for the first time I had to give the elements a good hard look. I copied them down on the same card along with the orbit.

It was ten till four when I reached Hildegard Hall. Wadstrom or somebody had badly underestimated our drawing power. The auditorium was jam-packed, with hundreds more clamoring for admission. By the time they'd set up some loud-speakers out on the lawn and got a few other things under control, it was nearly five. After a few introductory remarks by the president, the meeting was thrown open to questions.

"Is this a big comet?"

Wadstrom took this one.

"Yes, I think we are justified in describing Comet Ikegawa as a 'big one,'" he replied. "Comets seldom are bright enough to be discovered until within the orbit of Jupiter. This one was discovered slightly beyond the orbit of Saturn."

"Where do comets come from?"

Wadstrom shook his head regretfully.

"There is an old theory that comets are born of volcanic eruptions from Jupiter or possibly its giant satellites. Another has them originating in a vast comet cloud surrounding the solar system. It was once thought that comets reached us from the realm of the stars, but that idea is now generally rejected. The truth of the matter is we don't know where comets come from."

"How close is Comet Ikegawa coming to the Earth?"

"Within only about twenty million miles at the first encounter this month on the 23rd. The second encounter on November 7, however, will be very close."

One of the newspaper men had a question. "How close is 'very close'?"

Wadstrom looked grave.

"Unfortunately no definite answer is possible yet. The orbit still requires improvement. Let us say . . . within the distance of the moon."

"How does it happen the comet makes two close approaches to the Earth?"

"An interesting question," was Waldstrom's comment. "I believe that my colleague, Dr. Finch, can enlighten us on that point."

I went to the blackboard and began fumbling for my card. To my consternation I couldn't find it. I located it finally, but it gave me a bad scare.

"This represents the orbit of the Earth," I said, drawing a wobbly circle on the board. "This line here points to the vernal equinox, from which we measure directions in space. When the sun reaches the vernal equinox about March 21, then spring is here." This was meant to be funny, but nobody laughed.

"To draw in the comet we first

have to know how its orbit is oriented in space. We do this from the longitude of perihelion, the point on the orbit nearest the sun."

Ordinarily I would have had the sense to skip such technicalities; but I was nervous, and talking out loud to myself helped steady me.

"Starting at the vernal equinox, we measure off the longitude of the ascending node around this way," I informed my uncomprehending audience. "And then since this is a retrograde comet, we set off the argument of perihelion the other way. Which fixes perihelion for us here, in longitude  $186^\circ$ ."

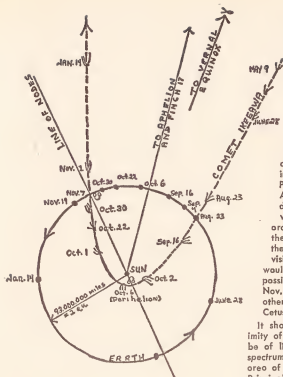
I remained mute staring at the number. There was something familiar about it I should know. Now what was it? It was right here on the tip of my tongue. . . . Got it! Of course!

I'm not very clear about the rest of the meeting. My mind was too busy elsewhere. It seems to me the reporters worked us around into a corner with their questions. After a while we were answering them all the same way, "Nobody knows."

Sept. 12

Life for me has become intensely interesting.

It happened when I blanked out at the blackboard trying to



Orbits of Earth and Comet Ikeyawa showing their encounter on Nov. 7, 1975. The comet approaches Earth along broken line to ascending node,  $\mathcal{A}$ . Comet is above plane of Earth's orbit briefly along continuous line to ascending node,  $\mathcal{V}$ . Afterward below plane of Earth's orbit along broken line again.

Notice motion of Comet Ikeyawa is clockwise or retrograde.

During May and June the comet would be an early morning object nearly stationary in Pisces and Cetus. Toward end of August the comet would suddenly start moving apparently with terrific speed, switching around to the opposite part of the sky in Virgo. The stars of these constellations would not be visible, of course, since comet would be in daylight sky. After passing its descending node  $\mathcal{D}$  on Nov. 7, the comet would do another lightning switcharound into Cetus again.

It should be noticed that the proximity of the comet to the Earth would be of little help in photographing its spectrum, since its brightness per unit area of surface would not be affected. Principal changes in spectrum would depend upon varying distance from sun.

locate that comet's perihelion. Only it wasn't perihelion that interested me. It was the direction of the point opposite that caught my attention. For is it this point that tells us the direction in space from which the comet came. I was sure I recognized it. The direction was the same as Finch 17, in Cetus.

Now comets approach the sun

from all directions in space. Comet Ikeyawa could have come in from Cetus as well as any other old constellation. Cetus occupies quite a bit of territory. If it had merely been the same constellation I'd never have given it a moment's thought. Just a coincidence. But was it a coincidence when this direction fell within 5 minutes of my star?

Could star and comet be associated in some way?

I've done a lot of thinking about it since then. It is a very tempting hypothesis. Without independent evidence to back it up, however, I am compelled to reject it.

Oct. 2

The story about finding carbon monoxide and cyanogen in Comet Ikegawa was all over the front page this morning. Wish I could have seen Wadstrom's face. Nothing secret about CO+ and CN being in a comet anyhow. It's something we've known for about a hundred years.

Actually the spectrum hasn't been too exciting so far, the usual bright bands on a solar type background. Interest is centered chiefly in the weak emission features in the red around 6400 Å, which don't seem to match with anything in the ARCS.\* But identification is next to impossible on the low dispersion spectra they've got now, 100Å/mm. Maybe the bands will pep up after perihelion on Oct. 6.

Oct. 21

It seems to me it was about a million years ago that I wrote, "Nobody wants war. Nobody's mad at anybody."

Not true any more. War fever's got us.

\* *Atlas of Representative Cometary Spectrum.*

You can blame it on the comet. Sounds crazy to say that, doesn't it? It is crazy. Yet in a way the comet's responsible.

The comet blazing in the daylight sky was hailed enthusiastically by the lunatic fringe as a sure sign of death. With the country in an acute state of war jitters people were ready to believe most anything. To avert a panic the government had scientists go on TV issuing soothing statements, there's no cause for alarm, don't listen to the prophets of doom, etc.

Then just when the situation was calming down what happened? The confounded comet changed from white to red — blood red. That did it.

Astronomers tried to explain how the blood color was due to red rays emitted by molecules of the coma. What molecules? Well . . . we don't know.

November 3

Mass hysteria is always hard to resist.

Comet Ikegawa still shows puzzling deviations from prediction. With so many observations available the orbit should be nailed down tight. Yet perihelion occurred about 30 minutes ahead of schedule.

How close is the comet coming on Nov. 7? You can take your choice. Forecasts range from

0.00091 au (Poulkovo) to 0.0171 au (UC at Berkeley.)\*

Nov. 7, 10:10 P.M.

This is the night. I'm here in my office writing this in a last effort to hold onto my sanity. The campus is dark. Everybody else has taken cover, I guess.

Poor comet! Supposed to reach its descending node in about an hour. It'll be all around us while we're passing through the coma.

If I could only do something noble for science on this historic occasion! Something great that would be retold in ages to come. Like Galois penning his theory of groups in frantic haste on the night of his fatal duel.

Nov. 7, 10:37 P.M.

Mob's awfully close. Once on campus they'll smash the observatory sure. Nothing I can do.

All right. I'm ready to die. I'm tired of this world. Glad to be leaving it. In this final hour I think of those words from *In-conscious*.

Out of the night that  
covers me,  
Black as the pit from  
pole to pole. . . .

1:20 A.M.

Dammit! I've changed my mind. I don't want to die now.

\*85,000 miles to 1,600,000 miles.

Got an idea for a possible check on at tie-in between the comet and Finch 17. Good old subconscious.

Got so absorbed in this idea forgot about everything else. Suddenly struck me after about an hour I was still alive and the world was still intact. Kind of disappointing. . . .

But no doubt SOMETHING had happened. It was so quiet. Not a sound anywhere. Maybe I was dead and didn't know it!

I unlocked the door and stole outside. (Somehow it didn't seem right just to "walk" outside.) The moon, a few days past full, was just rising. Never saw the campus when it looked so serene and peaceful. So still! Not a leaf stirring. The trees against the horizon might have been cut out of cardboard.

After my eyes got dark-adapted I could see the whole sky was filled with a fine mist, forming lunar haloes of radii about  $29^\circ$  and  $53^\circ$ , their inner edges red shading off to pale blue. The sky had a distinct cherry red tint in directions at right angles to the moon, as if the light was partially polarized. Evidently the mist had loaded the atmosphere, damping convection currents. Jupiter on the meridian was the only star easily visible.

The air, unseasonably warm earlier, now was cool and fresh.

odor as if charged with ozone. I filled my lungs with it. I couldn't get enough. With every breath I Stimulating, too, with an acrid felt my worries and anxieties slipping away, dissolving into the mist. Never had I seen everything so clearly before. My problems were resolving themselves. (They really didn't amount to much.) All the tangled pieces were falling into place. . . .

Dec. 19

Here it is almost Christmas. Examinations are over, thank goodness. Time to bring the old diary up to date.

So much has happened since the last entry, it's a good thing I don't have to rely on my memory. What follows is a composite of excerpts from several tape recordings, which I have transcribed into one in the form of narration. As I recall, these TV interviews occurred in the weeks immediately following the transcendent events of November 7.

"Dr. Finch, how do people generally react when a bright comet suddenly looms in their sky?"

"Well, I would say their reaction is generally one of fear and dread. As we have just seen, people are prone to regard a spectacular bright comet as an omen of evil, a portent of wars and other disasters."

"Is there any scientific basis

you know of for this belief?"

"Absolutely none whatever."

"Yet from the dawn of history to our supposedly enlightened times this dread of comets has persisted. Can you account for this irrational attitude on the part of the public?"

"Well, yes, I think I can. Let me emphasize, however, that I am not a psychologist and hence cannot speak with authority on such matters."

"Go right ahead, Dr. Finch. I am sure that any light you can shed on this question will be received with the greatest interest."

"Well, my feeling is that a spectacular comet provides us with a convenient object on which to project our own failings. All of us, I dare say, harbor sins and evil impulses which we would like to rid ourselves by transferring them to others. But this is not easy to do. For other people, instead of accepting them, are more likely to turn around and blame *us* for *their* sins. Thus as time goes on we become filled with a sense of guilt and frustration.

"Along comes this strange apparition in the sky, this comet. What is it? We don't know. But our natural tendency is to look upon anything outside our daily range of experience with dark suspicion. Thus in medieval

times the mandrake plant because of its forked root was considered the work of the devil. The tomato won slow acceptance in the United States; as late as 1900 many feared to eat tomatoes, believing them poisonous. Is it surprising that we regard this ghostly intruder from outer-space with dread and ascribe all sorts of evil to it? The comet can't defend itself. It's the perfect scapegoat!"

"Then there's no reason *a priori* for regarding a comet as an omen of evil?"

"Neither evil nor good. Or an omen of anything at all, for that matter."

"But wouldn't you agree, Dr. Finch, that Comet Ikegawa was distinctly an influence for good?"

"No doubt about it. The history of the world was changed during the period of scarcely one hour that the Earth was passing through its coma. The gases of the coma induced in us an euphoric state of a type hitherto unknown in the annals of medicine. Thoughts of war and hate disappeared. They are nothing but dim memories now. We are like a woman after childbirth who is unable to recall the pains she suffered during labor."

"Have they succeeded in identifying the structure of the molecule that gave rise to this euphoric condition?"

"Well, I understand there's a lot of work being done on that. They may get a clue from analysis of those bands in the red. So far there's nothing been established yet."

"Do you have any explanation yourself for the presence of those red euphoric bands in the spectrum of Comet Ikegawa?"

"I think that Comet Ikegawa was something very special."

"In what way, very special?"

"I am convinced in my own mind at least that the close approach of Comet Ikegawa was no accident. I think it was sent here for the very special purpose of saving us from self-destruction. Man is an organism of enormous complexity. The development of intelligent life was an event of fantastic improbability. The biologists declare it could not happen twice. That the Earth is the only place in the universe where life exists."

Dr. Finch paused for a moment. Upon resuming he spoke slowly, choosing his words with the greatest care.

"I am afraid the biologists were wrong. I think it *did* happen twice. I think there is another world where beings exist probably exceeding ourselves in intelligence. In some way — don't ask me how — they foresaw years ago that a world war was inevitable. And so, lest they

be the *only* world remaining where intelligent life exists, they sent this cometlike body across space to save us."

"But could they from so great a distance — "

"Not *all* the way necessarily from their world to ours. I suspect they possess a technique for assembling molecules of Euphorium from atoms readily available within the solar system. Doubtless only atoms of common elements were required . . . carbon . . . hydrogen . . . oxygen and the like. Some such molecular assemblage technique was postulated as early as the 1960's."\*

"Well, Dr. Finch, that's pretty tremendous. Can you offer any proof?"

"Not real proof, I'm afraid. Certainly not proof that everyone would be willing to accept."

"And now I see our time is almost up. Dr. Finch, is there any last message you would like to leave with our audience?"

"Only this. That we owe a debt to the inhabitants of a certain planet, a debt that we never will be able to repay."

A summary of my results will appear in an early issue of

\*Verhandl. Deut. Physik Ges., Berlin, Vol. 71, p. 217, 1963.

the *Astronomical Journal*. This new orbit of Comet Ikegawa 1975g is based upon images which appear on plates of Finch 17 taken some ten years ago for proper motion. Extending the ephemeris back ten years I found, as anticipated, a moving object whose motion corresponded in direction and amount with that calculated for the comet.

These pre-discovery positions yielded an arc much longer than hitherto available, enabling me to determine new elements of exceptional accuracy. After allowing for the perturbations of the major planets, it appeared that Comet Ikegawa was moving neither in an hyperbola nor parabola, but in an orbit definitely elliptical in character. Notice that *both* the longitude of aphelion and the aphelion distance agree closely with the position and distance, respectively, of Finch 17. We call attention to this circumstance without wishing to emphasize it.

Just opened my end-of-the-year letter from the bursar. I see they've promoted me to full professorship now. Also upped my honorarium by \$1,700. Wonder how Wadstrom and Peabody made out? Not that it makes any difference. . . .

—PHILIP LATHAM



**GALACTIC CONSUMER REPORT NO. 3**

**MEMBERSHIP SURVEY**

by JOHN BRUNNER



*Good readers, here are the results  
of our Consumer Testing survey —  
which thoroughly tested all of us!*

*(Extract from GOOD BUY, the  
journal of the Consolidated Gal-  
actic Federation of Consumers'  
Associations, February 2300  
ESY)*

Elsewhere in this issue you will find the complete results of our questionnaire intended to discover exactly who (or what) are our current members, why they joined, whether they are satisfied with our service and what products you whom we are here to serve want us to test in the immediate future. Owing to circumstances beyond our control, some of which are set out below in the most temperate

language of which we are at present capable, much of the data is primarily of academic or historical interest now. But we can at least pride ourselves on the fact that no similar undertaking has ever before been attempted, even though we could not in honesty advise anyone else to try it again.

When we first circulated the questionnaire, eight years ago, we promised that its findings would appear in one of the regular issues of this journal. We have managed to keep that promise. The information is condensed in microdot form as the last full stop on the last page

of the comparative study of high-precision microdot decipherers, and both the items nominated as "Best Buys" will enable you to read it, the magnification required being only of the order of  $\times 1,000,000$ .

Subscribers to the deluxe edition, apart from the two members on Alpheratz IX who withheld Cr. 17 from their dues on the grounds that they are anyway capable of distinguishing individual molecules with the naked eye, will eventually be sent the book version of the report. However, we must warn them that since it runs to 23 fat volumes occupying a meter and a half of shelf space, under current Galactic mailing regulations it can only be shipped by uncrewed ion-rocket; consequently only members belonging to species of exceptional longevity can expect to receive their copies personally. The rest will have to be satisfied with bequeathing them to their grandchildren.

Doubtless by now you're asking: "How did this delay arise?" Well, to start with, the level of response exceeded not only our wildest expectations but also those of the computer we hired to assess the likely return. It advised us that not more than one per million of the membership would be bothered to

fill out such a complex form.

What we *in fact* got back was more like a 67% response. As, relying on the computer's assessment, we had done no more by way of preparation than rent a small room in downtown Buenos Aires and hire an elderly female clerk with a hand-operated punch-card analyser, the sudden arrival of 2,619,312,003 questionnaires caused a minor technical hitch.

By the way, in a future issue we propose to conduct a survey of commercial computer advice services. Meantime, we must caution you against employing the Buckingham and Ketshwayo Service for Honest Oracular Pronouncements, which our staff is now accustomed to referring to as the Bucket Shop. They are not, on present evidence, a Good Buy.

We are also, incidentally, anxious to recruit volunteers to help us in a survey of planet-side postal services. We feel it is high time to establish a Galactic Postal Convention to assure the private correspondence of any intelligent organism all proper protection in transit and reasonable speed of delivery. The treatment we have been accorded by the Earthside authorities beggars belief, and it is highly probable that some of the questionnaires which members

on outlying planets went to a lot of trouble to complete and forward have never reached us.

For example, we regard it as inexcusable that merely because the only type of stationery available to a citizen of Shalimar happens to be fresh water-lily leaves and pale green bog-slime instead of paper and ink, some jumped-up jack-in-office at the Galactic Mail Center in Lhasa should be allowed to class his envelope as "perishable foodstuffs improperly packaged" and decline responsibility for its delivery.

Furthermore, it's mere common civility on Toothanclaw to wrap any missive to a person one wishes to flatter or defer to in the hide of one's latest kill. The more ambitious the kill (and there are creatures on that planet none of our staff would care to handle without battle armor and a lase-gun!), the greater the respect which the writer expresses towards the recipient.

One of our members there, obviously extremely appreciative of the services of ConGalFedCon-Ass, chose to employ the hide of a mugglebuck in which to return his questionnaire. That this hide continues to secrete pure hydrofluoric acid for nine years after being flayed, we submit, is as nothing beside the basic requirement that it should be delivered

to the address inscribed on the outside. The fact that mugglebuck skin remains dangerous to handle after the animal is killed is essentially a symbolic equivalent of the customary salutation "Your humble and obedient servant," but no postal authority would decline to accept mail because it included that phrase!

It was only by chance that we received the questionnaire sent us by a member on Caligula, moreover. She had gone to enormous trouble to address her package, because the yoggoth worms there customarily employed for the purpose have been selectively bred to adopt the forms of the Devanagari alphabet rather than the Terrestrial Roman system; it must have required several months of patient labor to train them to display an Earthside address-code.

All this nearly went for nothing when the Health Department sterilized the worms with insecticide — whereupon, of course, they reverted to the post-mortem straight position. Had it not been for an observant staff-member who was visiting the post office on another errand altogether, that questionnaire would doubtless have gone into the Dead Letter file.

But the last straw was the authorities' refusal to allow

one of our members on Hydatia to answer our questionnaire at all — a flagrant example of bureaucratic censorship at its worst. Much as we dislike expending our funds on litigation, we felt that in this case there was an important point of principle at stake and have instituted proceedings in the cause of interplanetary tolerance.

Hydations do possess a written language, but they reserve it entirely for public inscriptions, advertising puffs and other works of fiction. The only form of private communication expressed in writing is an invitation to a duel to the death, so great an insult is it not to convey your message in person.

Wishing to reply to our questionnaire, our member there adopted the normal course and put himself into suspended animation after attaching address labels and sufficient postage to his left ear. On arrival at our office, he would have delivered the information he had imprinted on his mind, and relapsed into his comatose state until restored to his home swamp.

However, despite being properly stamped for both the outward and return journeys, our member was forbidden admission to Earth — first by the Customs and Excise, who proposed to classify him as a museum exhibit sub-

ject to arbitrary valuation and 500% duty; then, when we'd sorted that out, by the Immigration Service, who argued that he lacked a visa.

Without being delivered, of course, the poor fellow will never wake up from his trance, so merely shipping him home doesn't solve the problem. A test case is now in progress before the Appellate Tribunal of the Pan-Galactic Court, and we will keep you apprised of developments.

Meantime, if anyone can offer us storage space for one inert male Hydatian approx. 37 meters by 11 by 4, capable of being maintained at a pressure of 325 kg./sk. cm. at  $-120^{\circ}\text{C.}$ , we shall be obliged. At present we are having to pay rent on a bonded warehouse at a rate which promises that we shall go bankrupt around the second week of August.

We had hoped that one of the things this questionnaire would enable us to do would be to revolutionize our method of selecting products to be tested by insuring that the items we chose were all goods that the members were eager to know about.

We have no wish to appear unappreciative of all the trouble you went to, but the sad truth is that after processing, cata-

loguing and analyzing the various products suggested by a substantial number of our members (arbitrarily, one million or more) we have decided to keep right on the way we were going before.

You see, the largest single batch of requests for tests on a single type of product which we received came from Triskelion. We had 8,623,517 of them. (Curiously enough, this was exactly the book-strength of the Hawk party in the Archduchy of Axenheim at the time our questionnaires arrived there.)

But we simply haven't got the facilities to evaluate the comparative merits of the various brands of planet-busting bomb at present on the market! We feel that if the Hawk party wish to substantiate their election slogan, "More Cash for a Credit!", they should institute their own testing program, preferably well away from Galactic trade routes.

We moreover feel very strongly that the two-million-odd inquirers from Phagia who asked us to test them for edibility ought to set up their own planetary chapter of ConGalFedConAss. We cannot possibly hope to determine which of them will prove tastiest at his or her funeral feast — a matter of fierce rivalry among that species, in case you

didn't know. Our entire permanent staff is human, and sampling creatures who live in an atmosphere of hydrogen sulphide at the boiling point of water would give us acute food-poisoning, thus hopelessly biasing the results.

By the way, we have exercised our discretionary right to terminate membership in the case of the young lady from Hippodamia who asked us to test the thirty-seven men who were suing for her hand in marriage. Frivolity of this kind is not in keeping with the high ideals of our organization. And we would have done the same to the member on Gyges who complained that his voyeur suit had gone wrong, and because it was stuck at the invisible setting he couldn't read the brand name on the label — would we test all makes on the market and tell him which kind has the switch under the left arm? But during his enforced imperceptibility he was run down by a rocket-sled. *De mortuis. . .*

Having had this rather gloomy picture of the outcome of our survey painted for you, you may now be asking, "Was there any point in mounting it, anyway?"

We are delighted to say that the answer is a resounding yes!

If it did nothing else, the sur-

vey showed us that we have been unforgivably neglectful of the true requirements of a very large proportion of our subscribers. We can only apologize for this and plead that one of the lessons we hoped to derive from the survey was to discover the nature of our median member.

Obviously, our average subscriber would be a nonsensical compound creature — to be exact, one-and-two-thirds of a married female with an annual income of 2800 credits, a batch of hoopoe eggs and seven-eighths of a hectare of reed matting, chiefly interested in the Zagnabovian question, potlatch, and the superior merits of strychnine over prussic acid as a seasoning for beef Bourguignon.

Our statisticians did, however, advise us that we could hope to determine a typical person who corresponded to the largest possible number of the membership. Somewhat to our surprise, when we punched the computer for this information, we discovered that our median was a citizen of Luxor, Lonestar or Eldorado, with an income of Cr. 27,000,000, taking the deluxe calf-bound vellum edition of this journal with handtooled gilt lettering on the spine and built-in pentasensory commentator — in quintuplicate or sextuplicate so that there would be a copy of

each month's issue for every member of the family, often including the dog! Very nearly one in three of the entire membership, reported the computer, fitted this general description.

Frankly, we were astounded. The level of affluence on those planets is so high that palladium-plated spaceboats are marketed by Neiman - Marcus - Harrods-Wojcecenski not in pairs but in groups of three labelled *His*, *Hers* and *Its*, so that the odd one can be thrown in the garbage on delivery.

Why, we asked ourselves, should GOOD BUY — dedicated to helping people secure maximum return for minimum outlay — be so popular on worlds where it doesn't make any difference at all whether what people buy is fit for use or not? (Except insofar as there is a risk of overloading garbage clearance facilities — but even that didn't seem especially significant. Most people there own robotic disposers which automatically shunt refuse into the local sun.)

And then we received a note, along with a copy of our questionnaire picked out in individual diamonds on inch-thick lead plates and expressed to us by Class Triple A\* galactic mail (which costs Cr. 3000 per gram), from which we discovered the explanation.

We have had to edit the letter slightly, but the gist of it was as follows.

"Why the (deleted) don't you (deleted) Earthside (deleted) get your heads out of that heap of (deleted) and catch on to what (deleted) like us really want? If my three-year-old daughter hadn't started to try and eat her copy of your last issue, it would have gone straight in the chute as it usually does, and I wouldn't have seen your questionnaire!

"I don't want to be told how to economize! I subscribe to your publication purely because I can always do with having expensive things shipped to me from distant worlds like Earth. (By the way, do you know where I could order a live blue whale not less than twenty meters long? Or a pair of Indian elephants would do, at a pinch.)

"Sorry. I'm being too hard on you. At least you take the trouble to quote exhorbitant terms.

"Look, the problem here is this. According to our tax laws, every Midsummer Day the government takes away all the money you haven't managed to spend since last time. It's a great way of minimizing bureaucratic interference with the daily lives of our citizens, not having sales tax and income taxes and all that other (deleted). But think what

happens if we don't spend enough!

"Lord, it's hard to find things one can buy as it is. If the government, armed with all the surplus revenue it collects from the citizens as I explained before, were to start bidding against private individuals, there wouldn't be anything left for us at all!

"Sure, charity donations are tax-deductible — in theory. But the last planetary census showed that the lowest income anyone had filed was four and a half million credits, and that wasn't even for a human being, but a canary! How the blazes do you operate a charity under those conditions?

"And gifts are tax-deductible, too. You find me someone who's willing to take a present from me, though! If anybody offered to give me a few million credits, I'd run. I don't think I'd even stop to get in a rocket, in spite of having a fleet of thirty of them. (Or possibly forty — I think I ordered some more the other day.)

"I'm going out of my skull, believe me! Right now I have the builders in — they're doing over the east wing in neo-rococo. But it's the third time I've had to rebuild the house this financial year, and I kind of liked the Moorish style we had before the pseudobrutalist installed last

month. Only I couldn't afford to keep on with it! As a result, here I am with rain streaming in through the cracked marble ceiling, trying to stop my daughter from breaking her neck on the floor of the sub-basement (sixty meters deep and due to be enlarged tomorrow) while they stick up all kinds of hideous gold and red fretwork in place of the black and white bricks they're scrapping. I have to do a lot of travelling — it's a good way of getting rid of extra credits — but once in a while I'd like to recognize my home when I come back to it!

"To cap the lot, I see on the morning news where the unions are threatening to strike for lower pay, and this blasted socialist government of ours always assesses tax-deductions at the current union scale. If they stay on strike until the tax year ends, moreover, I can't legally pay them anything! Help! HELP! ! !

Yours faithfully (signed):

*Getty C. Midas XXXIII"*

In face of a heartfelt cry like that, what decent being could refrain from coming to the rescue? As an interim measure we have quadrupled the subscription rates for the deluxe edition, and expressions of gratitude are already coming in. But we don't propose to stop there. Plans are afoot to produce an ultra-de-luxe edition on hygroscopic paper with soluble ink, guaranteed to become illegible within fifteen minutes of leaving the presses, so that indefinite repeat orders can be filed with not prospect of ever actually receiving a legible copy. And as of next month we shall start to issue a special supplement to GOOD BUY, entitled EXTRAVAGANZA, printed in thirty-six-point type on platinum sheets, and dedicated to the new, ringing, clarian call of our slogan: "The more you spend, the less you get!"

Getty C. Midas, do not despair; The Consolidated Galactic Federation of Consumer's Associations is on your side!

—JOHN BRUNNER

## SCIENCE FICTION FROM THE PLANET EARTH!

*Stories from all the world over —*

**ITALY**

**GERMANY**

**FRANCE**

**THE SOVIET UNION**

**ENGLAND**

*Plus articles, columns and a feature report on the 1967  
International Science Fiction Film Festival by Frederik Pohl.*

**INTERNATIONAL SCIENCE FICTION**



by LARRY NIVEN

Illustrated by GAUGHAN

*Pity the physically deprived.*

*How nice it is to help them*

*— and how very profitable!*

I

We flew on skycycles over a red desert, under the soft red sun of Down. I let Jilson stay ahead. He was my guide, and I hadn't been flying a skycycle long. I'm a flatlander. I had spent most of my life in the cities of Earth, where any flying vehicle is illegal unless fully automated.

I liked flying. I wasn't good at it yet, but there was plenty of room for mistakes with the desert so far below.

"There," said Jilson, pointing.  
"Where?"

"Down there. Follow me." His skycycle swung easily to the left and began to slow and drop. I followed more clumsily, overcorrecting and dropping behind. Eventually I spotted something.

"That little cone?"

"That's it."

From up here the desert looked lifeless. It wasn't, any more than the deserts of most inhabited worlds are lifeless. Down there, invisible at this height, were

spiky dry plants with water stored in their cores; flowers which bloomed after a rain and left their seeds to wait a year or ten years for the next rainfall; insect-things with four legs, unjointed; skinny, warm-blooded quadrupeds from the size of a fox on down, who were always hungry.

There was a five-foot hairy cone with a bald, rounded top. Only its shadow made it visible as we dropped toward it. Its lank hair was the exact color of the reddish sand.

We landed next to it and got off.

I was beginning to think I'd been played for a fool. The thing didn't look like an animal. It looked like a big cactus. Sometimes a cactus had hair just like that.

"We're behind it," said Jilson. He was dark and massive and taciturn. On Down there was no such animal as the professional guide. I'd talked Jilson into taking me out into the desert, for a fair fee, but it hadn't bought his friendship. I think he was trying to make that clear. "Come around in front," he said.

We circled the hairy cone, and I started to laugh.

The Grog showed just five features.

Where it touched flat rock, the base of the cone was some four

feet across. Long, straight hair brushed the rock like a floor-length skirt. A few inches up, two small, widely separated paws poked through the curtain of hair. They were the size and shape of a Great Dane's forepaws, but naked and pink. A yard higher two more paws poked through, but on these the toes were extended to curving, useless fingers. Finally, above the forepaws was a yard-long lipless gash of a mouth, half-hidden by hair, curved very slightly upward at the corners. No eyes. The cone looked like some stone-age carved idol, or like a cruel cartoon of a feudal monk.

Jilson waited patiently for me to stop laughing. "It's funny," he admitted, with reluctance. "But it's intelligent. There's a brain under that bald top, bigger than yours and mine combined."

"It's never tried to communicate with you?"

"Not with me nor with anyone else."

"Does it make tools?"

"With what? Look at its hands!" He regarded me with amusement. "This is what you wanted to see, isn't it?"

"Yes. I came a long way for nothing."

"Anyway, now you've seen it."

I laughed again. Eyeless, motionless, my potential customer sat like a fat lap dog in begging

position. "Come on," I said, "let's go back."

## II

A fool's errand. I'd spent two weeks in hyperspace to get here. The fare would come out of business expenses, but ultimately I'd pay for it; I was going to own the business one day.

Jilson took his check without comment, folded it twice and stuck it in his lighter pocket. He said, "Buy you a drink?"

"Sure."

We left our rented skycycles at the Downtown city limits and boarded a pedwalk. Jilson led the way from crossing to crossing until we were sliding past a great silver cube with a wriggling blue sign: *Cziller's House of Irish Coffee*. Inside, the place was still a cube, a one-story building forty meters high. Padded horse-shoe-shaped sofas covered the entire floor, so close you could hardly squeeze between them, each with its little disk of a table nestling in the center. From the floor a tinsel abstraction rose like a great tree, spreading its wide glittering arms protectively over the customers, rising forty meters to touch the ceiling. The bartending machinery was halfway up the tree.

"Interesting place," said Jilson. "These booths were built to

float." He waited for me to express surprise. When I didn't he went on: "It didn't work out. Lovely idea though. The chairs would swoop through the air, and if the people at two tables wanted to meet they'd slide their booths together and lock them magnetically."

"Sounds like fun."

"It was fun. The guy who thought it up must have forgot that people come to a bar to get drunk. They'd crash the booths together like bumper cars. They'd go as high as they could and then pour out their drinks. The people underneath didn't like that, and maybe there'd be a fight. I remember seeing a guy get thrown out of a booth. He'd have been dead if that tinsel centerpiece hadn't caught him. I hear another guy did die. He missed the branches."

"So they grounded the booths?"

"No. First they tried to make the course automatic. But you could still pour drinks on the people below, and there was more skill in it. It got to be a game. Then one night some idiot figured out how to short the autopilot. But he forgot the manual controls had been disconnected. His booth landed on another and injured three important people. *Then* they grounded the booths."

A floating tray served us two chilled glasses and a bottle of Blue Fire 2728. The bar was two-thirds empty, this early, and quiet. When the freeze-distilled wine was half gone I explained why they call Blue Fire the Crashlander's Peacemaker: the shape of the flexible plastic bottle, narrow-necked with a flaring mouth, plus the weight of the fluid inside, makes it a dandy bludgeon.

Jilson was turning almost garrulous, now that I was no longer his employer. I was talking a lot, too. Not that I felt like it. It was just — well, hell, here I was, light-years from Earth and business and the good people I knew, way out at the edge of human space. On Down — a former kzinti world, mostly empty, with a few scattered dots of civilization and a few great scars of old war, a world where the farmers had to use ultraviolet lamps to grow crops because of that red dwarf sun. Here I was. I was going to enjoy it.

I was enjoying it. Jilson was good company, and the Blue Fire didn't hurt at all. We ordered another bottle. The noise level rose as cocktail hour drew near.

"Something I've been wondering," said Jilson. "Mind if we talk business?"

"No. Whose business?"

"Yours."

"Not at all. Why do you even ask?"

"It's traditional, to us. Some people don't like giving away their tricks of the trade. Others like to forget work completely after hours."

"That makes sense. What's the question?"

"Why do you pronounce Handicapped with a capital H?"

"Oh. Well, if I said it with a small h you'd think I meant humans, wouldn't you? Potential paranoids, albino crashlanders, boosterspice allergics, people with missing limbs and resistance to transplants — handicapped like that."

"Yah."

"Whereas what I deal with is sentient beings who evolved with minds but with nothing that would serve as hands."

"O-oh. Like dolphins?"

"Right. Are there dolphins on Down?"

"Hell, yes. What else would run our fishing industry?"

"You know those things you pay them off in? They look like a squirt-jet motorboat motor with two padded metal hands attached."

"The Dolphin's Hands. Sure. We sell 'em other stuff, tools and sonic things to move fish around, but Dolphin's Hands are what they mainly need."

"I make them."

Jilson's eyes jerked up. Then . . . I could feel him withdrawing, backing off as he realized that the man across from him could probably buy Down. Damn! But the best I could do now was ignore the fact.

"I should have said my father's company makes them. One day I'll direct Garvey Limited, but my great grandfather will have to die first. I doubt he ever will."

Jilson smiled, with little strain. "I know people like that."

"Yah. Some people seem to dry out as they get older. They get dryer and tougher instead of getting fat, until you think they'll never change again, and they seem to get more and more energetic, like there's a thermonuclear source inside them. Gee-Squared is like that. A great old man. I don't see enough of him."

"You sound proud of him. Why does he have to die?"

"It's like a custom. Dad's running the company now. If he gets in trouble he can go to *his* father, who ran the company before him. If Gee-Prime can't handle it they both go to Gee-Squared."

"Funny names."

"Not to me. That's like a tradition too."

"Sorry. What are you doing on Down?"

"We don't deal only with dolphins." The Blue Fire made me

want to lecture. "Look, Jilson. We know of three sentient beings without hands. Right?"

"More than that. Puppeteers use their mouths. Outsiders —"

"But they build their own tools, dammit. I'm talking about beasts who can't even crack themselves a fist-ax, or hold a lighter. Dolphins, bandersnatchi . . . and that thing we saw today."

"The Grog. Well?"

"Well, don't you see that there must be Handicapped species all over the galaxy? Minds but no hands. I tell you, Jilson, it gives me the shivers. For as long as we expand to other stars we're going to meet more and more handless, toolless, helpless civilizations. Sometimes we won't even recognize them. What are we going to do about them?"

"Build Dolphin's Hands for them."

"Well, yes, but we can't just give them away. Once one species start depending on another, they become parasites."

"How about bandersnatchi? Do you build hands for bandersnatchi?"

"Yes. Lots bigger, of course." A bandersnatchi is twice the size of a brontosaur. Its skeleton is flexible, but has no joints; the only breaks in its smooth white skin are the tufts of sensory bristles on either side of its tapering blank head. It moves on

a rippling belly foot. They live in the lowlands of Jinx, browsing off the gray yeast along the shorelines. You'd think they were the most helpless things in known space . . . until you saw one bearing down on you like a charging mountain. Once I saw an ancient armored car crushed flat across a lowlands rock, straddled by the broken bones of the beast that ran it down.

"Okay. How do they pay for their machines?"

"Hunting privileges. Hunting *them*."

Jilson looked horrified. "I don't believe you."

"I hardly believed it myself. But it's true." I hunched forward across the tiny table. "Here's how it works. The bandersnatchi have to control their population; there's only so much shoreline to feed on in the lowlands. They also have to control boredom. Can you imagine how bored they must have been before men came to Jinx? So what they've done is, they've made a treaty with the Jinx government. Now, say a man wants a bandersnatch skeleton; he's going to build a trophy room under it. He goes to the Jinx government and gets a license. The license tells him what equipment he can take down to the lowlands, which is inhabited only

by bandersnatchi, because the atmospheric pressure is enough to crush a man's lungs and the temperature is enough to cook him. If he gets caught taking extra weapons he goes to prison for a long time.

"Maybe he makes it back with a body, maybe he doesn't come back. His equipment gives him odds of about sixty-forty. But either way, the bandersnatchi get eighty per cent of the license fee, which is a thousand stars flat. With that, they buy things."

"Like Hands."

"Right. Oh, one more thing. A dolphin can control his Hands with his tongue, but a bandersnatchi can't. We have to build the control setup directly into the nerves, by surgery. It's not difficult.

Jilson shook his head and dialled for another bottle.

"They do other things," I said. "The Institute of Knowledge has instruments in the lowlands. Laboratories and such. There are things the Institute wants to know about what happens under lowland pressure and temperatures. The bandersnatchi run all the experiments, using the Hands."

"So you came here for a new market."

"I was told there was a new sentient life form on Down, one that doesn't use tools."

"You've changed your minds?"

"Just about. Jilson, what makes you think they're sentient?"

"The brains. They're huge."

"Nothing else?"

"No."

"Their brains might not work like ours. The nerve cells might be different."

"Look, we're about to get technical. Let's drop it for tonight." And with that, Jilson pushed the bottles and glasses to one side and stood up on the table. He peered around Cziller's House of Irish Coffee, swinging his head in a slow arc. "Hah. Garvey, I've spotted a cousin and one of her friends. Let's join 'em. It's almost dinnertime."

I thought we'd be taking them to dinner. Not at all. Sharon and Lois built our dinner, handmade, starting with raw materials we picked up in a special store. Seeing raw food for the first time, practically in the state in which it had emerged from the ground or been cut from a dead beast, made me a little queasy. I hope I didn't show it. But dinner tasted fine.

After dinner and some polite drinking and talk, back to the hotel. I went to sleep planning to hop a ship the next morning.

I woke in total darkness around oh four hundred, staring

at the invisible ceiling and seeing a round-topped cone with reddish lank hair and a faintly smiling mouth. Smiling at me in gentle derision. The cone had secrets. I'd come *that* close to guessing one of those secrets this afternoon; I'd seen something without noticing it . . .

Don't ask me how I knew. With a crystalline certainty which I could not doubt, I *knew*.

But I couldn't remember what I'd seen.

I got up and dialed the kitchen for some hot chocolate and a tuna sandwich.

Why should they be intelligent? Why would sedentary cones evolve a brain?

I wondered how they reproduced. Not bisexually; they couldn't get to each other. Unless — but of course there must be a motile stage. Those leftover paws . . .

What would they eat? They couldn't find food; they'd have to wait for it to come to them, like any sessile animal: clams, sea anemones, or the Gummidgy "orchid" I keep in my living room so I can shock hell out of guests.

They *had* a brain. Why? What did they do with it, sit and think about all they were missing?

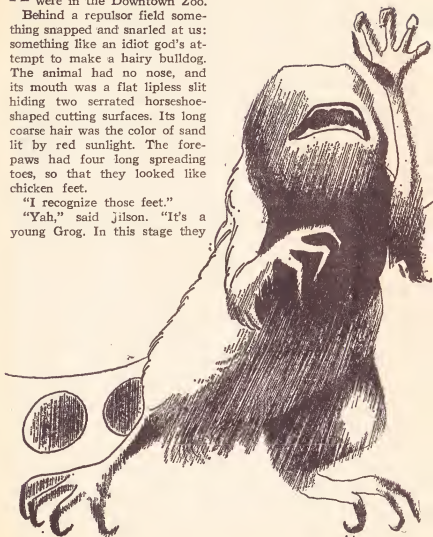
. . . I need data. Tomorrow I'd contact Jilson.

At eleven the next morning we were in the Downtown Zoo.

Behind a repulsor field something snapped and snarled at us; something like an idiot god's attempt to make a hairy bulldog. The animal had no nose, and its mouth was a flat lipless slit hiding two serrated horseshoe-shaped cutting surfaces. Its long coarse hair was the color of sand lit by red sunlight. The fore-paws had four long spreading toes, so that they looked like chicken feet.

"I recognize those feet."

"Yah," said Jilson. "It's a young Grog. In this stage they





mate. Then the female finds a rock and settles down. When she's big enough she starts having children. That's the theory, anyway. They won't do it in captivity."

"What about the males?"

"In the next cage."

The males, two of them, were the size of chihauhaus, with about the same temperament. But they had the serrated horse-shoe teeth and the coarse reddish hair.

"Jilson, if they're intelligent, why are they in cages?"

"If you think that's bad, wait'll you see the lab. Look, Garvey, what you've got to keep in mind is that nobody's proven they're

intelligent. Until somebody does, they're experimental animals."

They have an odd, almost pleasant odor, faint enough so that you stopped noticing it in two or three seconds. I peered in at the snapping motile-stage female. "What happens then? Does everyone suddenly get ashamed of themselves?"

"I doubt it. Do you happen to know what Lilly and his associates did to dolphins while trying to prove they were intelligent?"

"Brain probes and imprisonment. But that was a long time ago."

"Lilly was trying to prove dolphins were intelligent, but he treated them like experimental animals. Why not? It makes sense. If he's right, he's done the species a service. If he's wrong, he's only wasted time on animals. And it gave the dolphins a hell of an incentive to prove he was right."

We reached the lab shortly after noon. It was the Laboratory for Xenobiological Research, a rectangular building beyond the outskirts of the city, surrounded by brown fields marked with rectangular arrays of ultraviolet lamps on tall poles. In the distance we could see the Ho River, with flocks of water skiers skimming across its mud-

dy surface behind puller units.

A Dr. Fuller showed us through the lab. He was an obvious crashlander: a towering albino, seven feet tall, with a slender torso and tapering, almost skeletal limbs. "You're interested in the Grog? I don't blame you. They're very difficult to study you know. Their behavior tells nothing. They sit. When something comes by they eat. And they bear young."

He had several pre-sessile cones, the bulldog-sized quadrupeds, in cages. There was another cage containing two of the little males. They didn't bark at him, and he treated them with tenderness and something like love. It seemed to me that he was a happy man. I could sympathize with him. Down must look like paradise to an albino from We Made It. You can walk around outside all year, the soil grows things, and you don't need tannin pills under the red sun.

"They learn fast," he said earnestly. "That is, they do well in mazes. But they certainly aren't intelligent. About as intelligent as a dog. They grow fast, and they eat horrendously. Look at this one." He picked up a very fat, round-bottomed female. "In a few days she'll be looking for a place to anchor."

"What will you do then? Turn her loose?"

"We're going to raise her just outside the lab. We've picked her a good anchor rock and built a cage around it. She'll go into the cage until she changes form, and then we remove the cage. We've tried this before," he added, "but it hasn't worked out. They die. They won't eat, even when we offer them live meat."

"What makes you think this one will live?"

"We have to keep trying. Perhaps we'll find out what we're doing wrong."

"Has a Grog ever attacked a human being?"

"To the best of my knowledge, never."

To me, that was as good an answer as No. Because I was trying to find out if they were intelligent.

Consider the days when it was first suspected that the cetaceans were Earth's second sentient order of life. It was known, then, that dolphins had many times helped swimmers out of difficulty — and that no dolphin had ever been known to attack a human being. Well, what difference did it make whether they had *not* attacked humans, or whether they had done so only when there was no risk of being caught at it? Either statement was proof of intelligence.

"Of course, a man may simply be too big for a Grog to eat.

Look at this," said Dr. Fuller, turning on a microscope screen. The screen showed a section of a nerve cell. "From a Grog's brain. We've done some work on the Grog's nervous system. The nerves transmit impulses more slowly than human nerves, but not much more. We've found that a strongly stimulated nerve can fire off the nerve next to it, just as in terrestrial chordates."

"Are the cones intelligent, in your opinion?"

Dr. Fuller didn't know. He took a long time saying it, but that's what it boiled down to. It distressed him; his ears turned red beneath the transparent skin. He wanted to know. Perhaps he felt he had a right to know.

"Then tell me this. Is there any evolutionary reason for them to have developed intelligence?"

"That's a much better question." But he hesitated over the answer. "I'll tell you this. There is a terrestrial marine animal which starts life as a free-swimming worm with a notochord. It later settles down as a sessile animal, and it gives up the notochord at the same time."

"Amazing! What's a notochord?"

He laughed. "Like your spinal cord. A notochord is a rope of nervous connection which branches into the trunk nerves of the body. More primitive forms have

sensory connections, but arranged without order. More advanced forms wrap a spine around the notochord and become vertebrates."

"And this beast gives up its notochord."

"Yes. It's retrograde development."

"But the Grogs are different."

"That's right. They don't develop their large brains until after they settle down. And, no, I can't imagine an evolutionary reason. They shouldn't need a brain. They shouldn't have a brain. All they do in life is sit and wait for morsels of food to hop by."

"You speak almost poetically when you turn your mind to it."

"Thank you. I think. Mr. Garvey, will you come this way? You too, Jil. I want to show you a Grog central nervous system. Then you'll be as confused as I am."

The brain was big, as advertised, and globular, and a strange color — almost the gray of human gray matter, but with a yellow tinge. It might have been the preservative. The hind-brain was almost unnoticeable, and the spinal cord was a limp white string, uselessly thin, tapering almost to a thread before it ended in a multiple branching. What could that monstrous brain control before with practically no

spinal cord to carry its messages?

"I gather most of the nerves to the body don't go through the spinal cord."

"I believe you're wrong, Mr. Garvey. I've tried without success to find supplementary nerves." He was smiling slightly. Now I had a piece of the problem. We could *both* stay awake nights.

"Is the nervous material any different from the motile form's brain?"

"No. The motile form has a smaller brain and a thicker spinal cord. As I said, its intelligence is about that of a dog. Its brain is somewhat larger, which is to be expected when you consider the slower rate of propagation of the nerve impulse."

"Right. Does it help you to know that you've ruined my day?"

"It does, yes." He smiled down at me. We were friends. He was flattered to know that I understood what he was talking about. Otherwise I wouldn't have looked so puzzled.

The big soft sun was halfway down the sky when we got out. We stopped to look at the anchor pen Dr. Fuller had set up outside. One big flat rock with sand heaped around it, all enclosed in a wide fence with a gate. A smaller pen against the fence housed a colony of white rabbits.

"One last question, Doctor. How do they eat? They can't just sit and wait for the food to pop into their mouths."

"No, they have a very long, slender tongue. I wish I could see it in use sometime. They won't eat in captivity; they won't eat when a human being is anywhere near."

We said our good-byes and took our skycycles up.

"It's only fifteen ten," said Jilson. "Do you want another look at a wild Grog, before you leave Down?"

"I think so, yes."

"We could get out into the desert and back before sunset."

And so we turned west. The Ho River slipped beneath us, and then a long stretch of cultivated fields.

#### IV

*They can't be intelligent, I was thinking. They can't.*

"What?"

"Sorry, Jilson. Was I talking out loud?"

"Yah. You saw that brain, didn't you?"

"I did."

"Then how can you say they're not intelligent?"

"They've got no use for intelligence."

"Does a dolphin? Or a sperm whale, or a bandersnatch?"

"Yes, yes, no. Think it through. A dolphin has to hunt down its food. It has to outwit hungry killer whales. A sperm whale also has the killer whale problem, or used to. Then there were whaling ships. The smarter they were, the longer they could live.

"Remember, cetaceans are mammals. They developed some brains on land. When they went back to the sea they grew, and their brains grew too. The better their brains were, the better they could control their muscles, and the more agile they were in water. They needed brains, and they had a head start."

"What about bandersnatchi?"

"You know perfectly well that evolution didn't produce the bandersnatchi."

A moment of silence. Then, "What?"

"You really don't know?"

"I've never heard of a life form being produced without evolution. How did it happen?"

I told him.

Once upon a time, a billion and a half years ago, there was an intelligent biped species. Intelligent — but not very. But they had a natural ability to control the minds of any sentient race they came across. Today we call them Slavers. At its peak the Slaver Empire included most of the galaxy.

One of their slave races had been the tnuclip, a highly advanced, highly intelligent species already practicing biological engineering when the Slavers found them. The Slavers gave them limited freedom, after they found the worth of those freethinking brains. In return the tnuclipun had built them biological tools. Ani plants for their spacecraft, stage trees with shaped solid-fuel rocket cores, racing animals, bandersnatchi. The bandersnatchi was a meat animal. It would eat anything, and everything but its skeleton was edible.

There had come a day, a billion and a half years ago, when the Slavers found that most of the tnuclip gifts were traps. The rebellion had been a long time building, and the Slavers had underestimated their slaves. To win that war they had been forced to use a weapon which exterminated not only the tnuclipun, but every other sentient species then in the galaxy. Then, without slaves, the Slavers too had died.

Scattered through known space, on odd worlds and between stars, were the relics of the Slaver Empire. Some were Slaver artifacts, protected against time by stasis fields. Others were more or less mutated tnuclip creations: sunflowers, stage trees, ships' air plants floating naked in space in bubbles and bander-snatchi.

The bandersnatchi had been one of the tnucltip traps. It had been built sentient, so that it could be used as a spy. Somehow the tnucltipun had made it immune to the Slaver power. Thus it had lived through the revolution . . . .

For what?

The Jinxian bandersnatchi spent their lives in a soupy, pressurized fog, browsing off the ancient food yeast which still covered the ocean a foot deep in cheesy gray scum. No data reached their senses but for the taste of yeast and the everlasting gray mist. They had brains to think with but nothing to think about . . . until the coming of man.

"And it can't mutate," I concluded. "So you can forget the bandersnatch. He's the exception that proves the rule. All other known Handicapped needed brains before their brains developed."

"And they're all cetaceans, from Earth's oceans."

"Well —"

Jilson made a razzing noise. Hell, he was right. They were all cetaceans.

We'd left the plowed lands far behind. Gradually the plains became a desert. I was beginning to feel more comfortable with the beast under me, this platform with a saddle and an oversized

lift-belt motor and an air pump and a forcefield generator to stop the wind. Feeling less likely to make a mistake, I could fly lower, with less room to correct before I hit sand. From this close the desert was alive. There, rolling before the wind, was a wild cousin to the tumbleweeds I'd seen in the Zoo of Earth. There, a straight stalk with orange leaves around the base, fleshy leaves with knife-sharp edges to discourage herbivores. There, another, and a fox-sized herbivore cleverly eating out the center of a leaf. It looked up, saw us and disappeared into motion. There, a vivid flash of scarlet, some desert plant which had picked an odd time to bloom.

The soft red sun made everything look like the decor in a night club I know. It's decorated like Mars ought to be, like Mars "was" before space flight. A distance illusion: red sand, straight canals running with improbably clear, pure water, crystal towers reaching high, high, toward big fat crescent moons. Suddenly I wanted a drink.

I dug in my saddlebags, hoping to find a flask. It was there, and it was heavy with fluid. I pinched the top open, tilted it to my lips — and almost choked. Martini! A half-pint martini, a little too sweet, but far colder than ice cold. I sipped at it,

twice, and put it away. "I like Downers," I said.

"Good. Why?"

"No flatlander would think to put a martini in a rental skycycle unless he was asked to."

"Harry's a nice guy. Woop, there's a cone."

I looked down and right, searching for sand-colored hair against sand. The cone was in its own shadow; it practically jumped at me. And, equally suddenly, I knew what had awakened me in the dark morning.

"What's wrong?" asked Jilson. I realized that I'd gasped.

"Nothing. Jilson, I don't know all I should about Downer animals. Do they excrete solids?"

"Do they —? Hey, that was nicely put. Yes, they do." He tilted his vehicle toward the cone.

It sat firmly on a tilted flat rock which lifted one edge out of the sand. The rock was absolutely clean.

"Then Grog's do too."

"Right." Jilson landed.

I drifted in beside him, dropped the skycycle joltingly hard. The Grog sat facing us, smiling.

"Well, where's the evidence? Who cleans after this thing?"

Jilson scratched his head. He walked around the base of the Grog and came back, looking puzzled. "Funny, I never thought of that. Scavengers?"

"Maybe."

"Would that be very important?"

"Maybe. Most sessile animals live in water. The water carries everything away."

"There's a sessile thing from Gummidy that doesn't."

"I've got one. But the orchid-thing lives in trees. It attaches itself to a nice thick horizontal tree branch, with its tail hanging over the edge."

"Mmm." He seemed uninterested. No doubt he was right; some scavenger cleaned up after the Grog. But it didn't sound right. Why would the parasite animal do such a good job?

The Grog and I faced each other.

As a rule the Handicapped seemed to suffer from sensory deprivation. Cetaceans live underwater; bandsnatchi live in heated, pressurized fog. Maybe it's too early to make such rules, but it's for sure that a Handicapped will have trouble experimenting with his environment. Experiments generally require tools.

But the Grog had real troubles. Blind, numb in all its extremities due to the nearly useless spinal cord, unable even to move to a different location — what could be its picture of the universe?

Somehow I found myself staring at its hands.

*Hands.* Useless, of course, but still — hands. Four fingers with tiny claws, set around the tiny palm like the fingers of a mechanical grab.

"It didn't evolve at all. It devolved!"

Jilson looked up. He was using his skycycle as the only convenient thing to sit on for miles around. "What are you talking about?"

"The Grog. It's got vestigial hands. Once it must have been a higher form of life."

"Or a climbing animal, like a monkey."

"I don't think so. I think it had a brain and hands and mobility. Then something happened, and it lost its civilization. Now it's lost its mobility and its hands —"

"Why would it stop moving?"

"Maybe there was a shortage of food. Not moving conserved energy." And because that was the sheerest guesswork, I added, "Or maybe it got in the habit of watching too much tridee. I know people who don't move for weeks."

"During the Interworld Play-offs my cousin Ernie — Hell with it. You think that's the answer, do you?"

"Yes. It's in a trap. No eyes, no sensory input, no way to do anything with what it does think about. It's like a blind, deaf and

dumb baby with glove anesthesia all over."

"It's still got the brain."

"Like our appendix. It'll lose that too."

"You're the one who was worried about the Handicapped. Can't you do anything for it?"

"Euthanasia, maybe. No, not even that. Let's go back to Downtown." I walked through sand toward my cycle, sick with discouragement. Bandersnatchi had needed men to tell them about the stars. But what could you tell a hairy cone?

No, it was back to Downtown for me, and then back to Earth. There are people no doctor and no psychiatrist can help; and there are species equally beyond aid. With the Grogs there was no place to start.

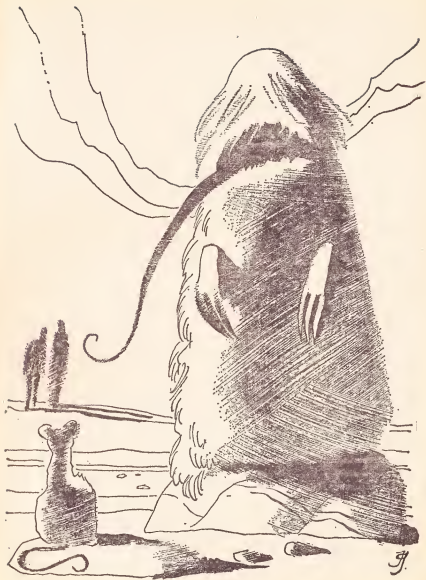
A few feet from the cycle I sat down cross-legged in the sand. Jilson got down beside me. We faced the Grog, waiting.

By and by Jilson said, "What are we waiting for?"

I shrugged. I didn't know. But Jilson didn't move, and neither did I. I knew with a crystalline certainty that we were doing the right thing.

Simultaneously, we turned from the Grog to look into the desert.

Something the size of a rat came hopping toward us, kick-



ing up dust. Behind it, another, and another. They hopped laboriously across the sand, springing high, and stopped in an arc facing the Grog.

The Grog turned toward them — not like you'd turn your neck, but turning all over, like you'd wring a dishcloth. It looked sightlessly at the sand rats, and the sand rats perched on their hind legs and looked back.

The Grog's mouth opened. It was a cavern, and the tongue was coiled on its pink floor. The tongue moved like a flash, invisibly fast, flick, flick. Two of the rats were gone. The mouth (not too small to swallow a man) dropped shut, smiling gently.

The third rat was there on its hind legs. None of them had tried to run. They might just as well have.

Again the Grog's mouth dropped open. The last sand rat took a running leap and landed on the coiled tongue. The mouth closed for the last time, and the cone turned back to face us.

I had the answers, all at once, intuitively, with the same force of conviction that now had me sitting cross-legged on the sand.

The Grog was psychic. Or something similar. It could control minds, even minds as insignificant as a sand rat's.

That was the purpose of the Grog's large brain. Its intelli-

gence was a side effect of its power. For eons the Grog had called their food to them. They did not hunt after childhood. After the brain had developed they need never move again.

They didn't need eyes; they had little need of other sensory perceptions. They used the senses of other animals.

They directed the scavengers who cleaned their rocks, and their pelts, too, when necessary. Their mind control brought meat animals to their pre-sessile female young, directed their breeding habits and guided them to proper anchor rocks.

And they were now feeding information directly into my brain.

I said, "But why me?" I knew, with that "crystalline certainty" I was learning to recognize. The Grog was aware of what they were missing. They had read the minds of passersby: first kzinti warriors, then human miners, explorers, sightseers. And my business was the Handicapped. They had learned of the Dolphin's Hands. They had primed Jilson and others to know, without evidence, that the Grog was sentient, and to say so when the right person should appear.

*Without evidence.* That was important. They had to know what they were getting into before committing themselves.

Men like Dr. Fuller could investigate if they liked; it would look suspicious if they were prevented. But *something* kept them from noticing the handlike appearance of those tiny forepaws, the lack of biological wastes around a wild Grog.

Could I help them?

The question was suddenly an obsession. I shook my head to fight it off. "I don't know. Why did you wait so long to show yourselves?"

Fear.

"Why? Are we that terrifying?"

I waited for an answer. None came. There was no sudden, utterly convincing bit of data in my brain.

Then they feared even me. Me, helpless before a flickering tongue and an iron mind. I wondered why?

I was sure that the Grogs had developed from some higher, bipedal form of life. The tiny hands, like mechanical grabs, were characteristic. As was that eerie mental control . . . .

I tried to stand up, to run. My legs wouldn't lift me. I tried to blank my thoughts, to hide what I'd guessed, but that was useless. They could read my mind. They knew.

"It's the Slaver power. Your ancestors were Slavers." And here I sat, with my mind wide open and helpless . . . .

Soothingly, with characteristic S crystal certainty, I realized: That the Grogs knew nothing of Slavers. That, as far as they knew, they had been there forever.

That the Grogs *couldn't* be idiot enough to try for a take-over bid. They were sessile. They couldn't move. Their leftover Slaver power could reach less than halfway around the world, with all the Grog individuals working together. How could they dream of attacking a species which controlled all space in a thirty-light-year-diameter sphere? Fear alone had kept them from letting mankind know what they were. Fear of extermination.

"You could be lying about how far you can reach. I'd never know."

Nothing. Nothing touched my mind. I stood up. Jilson watched me, then got up and mechanically brushed himself off. He looked at the Grog, opened his mouth, closed it, gulped and said, "Garvey! What did it do to us?"

"Didn't it tell you?" In the same moment I was certain it hadn't.

"It made me sit down, it put on a show with sand rats . . . . you saw it too, didn't you?"

"Yes."

"Then it left us sitting awhile. You talked to it. Then

suddenly we were able to get up."

"That's right. But it talked to me, too."

"I told you it was intelligent!"

"Jilson, can you find your way back here in the morning?"

"Absolutely not. But I'll set your skycycle to record your course, so you can get back. If you're sure you want to."

"I'm not. But I want the choice."

The sun was a smoky red glow in the west, fading over a blue-black horizon.

*I'd laughed.*

The hotel rooms didn't have sleeping plates. If you slept at all, you slept on a flat, cushiony surface and liked it. I'd slept all right last night, until the Grog's call came to wake me in the small hours. But how could I sleep now?

Unbeknownst to yours truly, Sharon and Lois had been expecting us for dinner. Jilson had phoned them before we set out for the zoo. Tonight we'd eaten some kind of small bird, one each. Delicious. You didn't dare touch anything afterward, not until you'd wiped your hands on hot towels.

And we'd talked about the Grog. The cone had left Jilson's mind practically untouched, so that he'd have something like an unbiased opinion. His unbiased

opinion was that he wasn't going back there for anything, and I shouldn't either. The girls agreed.

*I'd laughed at the Grog. Who wouldn't?*

Dolphins, bandersnatchi, Grog — you laugh at them, the Handicapped. You laugh with a dolphin, really; he's the greatest clown in known space. You laugh the first time you see a bandersnatch. He looks like something God forgot to finish; there's no detail, just that white shape. But you're laughing partly out of nervousness, because that moving white mound would no more notice you than a land tank would notice a snail under its treads. And you laugh at a Grog. No nervousness there. A Grog is a cartoon.

Like a doctor using a stomach pump in reverse, the Grog had shoved its information down my throat. I could feel the bits of cold certainty floating in my mind like icebergs in dark water.

I could doubt what I had been told. I could doubt, for instance, that all the Grog on Down could not reach out to twist the minds of humans on, say, Jinx. I could doubt their terror, their utter helplessness, their need for my help. But I had to keep remembering to doubt. Otherwise the doubt would go, and the cold bits of certainty remained.

Not funny.

We ought to exterminate them. Now. Get all men off Down, then do something to the sun. Or bring in an old STL ramscoop-fusion ship and land it somewhere, leave the ramscoop running, twist every vertebrate on the planet inside out.

But:

They had come to me. To me.

They were so secretive, so mortally afraid of being treated like savage, resurrected Slavers. Dr. Fuller could have been told half the truth, and he would have stopped his experimenting; or he could have been stopped in his tracks by the reaching Grog minds. But no. They preferred to starve, to keep their secrets.

Yet they'd come to me at the first opportunity.

The Groggs were eager. Man, what a chance they'd taken! But they needed — something. Something only mankind could provide. I wasn't sure what, but of one thing I was sure:

It was a seller's market. They wanted to do business. It was no guarantee of their good faith; but if I could think of such guarantees, I could force them through.

Then I felt those crystalline certainties again, floating in my mind. I didn't want any more of those.

I got up and ordered a peanut butter, bacon, tomato, lettuce sandwich. It arrived without

mayonnaise. I tried to order mayonnaise, but the kitchen dispenser had never heard of it.

A good thing the Groggs hadn't revealed themselves to the kzinti, back when Kzin owned the planet. The kzinti would have wiped them out, or, worse, used them as allies against human space. Had the kzinti used Groggs for food? If they had, then — But no. The Groggs would make poor prey. They couldn't run.

My eyes were still seeing red light, so that the stars beyond the porch seemed blue and bright above a black plain. I thought of going down to the port and renting a room on some grounded ship, so that at least I could float between sleeping plates. Nuts.

I could not face a Grog. Not when it had to talk to me by —

That was at least part of the answer. I phoned the desk computer and told it what I wanted.

By and by other parts of the answer came. There was a mutated alfalfa grass which would grow under red sunlight; the seeds had been in the cargo hold of the ship that brought me. It was part of Down's agricultural program. Well . . .

## VI

I flew back to the desert the next morning, alone. The guy

who owned the skycycles had set mine aside, with the course record intact so I could find my way back.

The Grog was there. Or I'd found another by accident. I couldn't tell, and it didn't matter. I grounded the skycycle and got off, tensing for the feel of little tendrils probing at my mind. There was nothing. I was sure it was reading my mind, but I couldn't feel it.

With crystalline certainty there came the knowledge that I was welcome. I said, "Get out of there. Get out and stay out."

The Grog did nothing. Like the knowledge I'd gained yesterday afternoon, the conviction stayed: I was welcome, welcome. Great.

I dug in my saddlebags and pulled out a heavy oblong. "I had a lot of trouble finding this," I told the Grog. "It's a museum piece. If Downers weren't so hell bent on doing everything with their hands I'd never have found one at all."

I opened it a few feet from the Grog's mouth, inserted a piece of paper in the rollers, plugged the cord into a hand battery. "My mind will tell you how to work this. Let's see how good your tongue is." I looked for a good seat, finally settled my back against the Grog, under its mouth. I could read the print

from here. There was no feeling of lese majeste. If the Grog wanted me for dinner I was doomed, period.

The tongue lashed out, invisibly fast. PLEASE KEEP YOUR EYES ON THE TYPEWRITER, it printed. OTHERWISE I CANNOT SEE IT. WOULD YOU MOVE THE MACHINE FURTHER AWAY?

I did. "How's that?"

GOOD ENOUGH. YOU ARE OVERCONCERNED WITH PRIVACY.

"Maybe. This seems to work. Now, before we begin, would you read my mind about ramscoop motors?"

I SEE. CONSIDER THE POINT MADE.

"Then I will. What can you offer us in trade?"

JUST WHAT YOU THINK WE WILL HERD YOUR CAT TLE. IN TIME THERE MAY BE OTHER THINGS WE CAN DO. WE COULD MONITOR THE HEALTH OF ZOO ANIMALS AND BE EXHIBITS AT THE SAME TIME. WE CAN DO POLICE WORK WE WILL GUARD DOWN. AN ENEMY COULD DESTROY DOWN, BUT NO ENEMY COULD INVADE DOWN. Despite the speed of its flicking tongue, the Grog typed as slowly as a one-finger typist.

"Okay. You wouldn't object to

our seeding your property with mutated grass?"

NO, NOR TO YOUR MOVING CATTLE INTO OUR TERRITORY. WE WILL NEED SOME OF THE CATTLE FOR FOOD, AND WE WOULD PREFER THAT THE PRESENT DESERT ANIMALS REMAIN. WE DO NOT WISH TO LOSE ANY OF OUR PRESENT TERRITORY.

"Will you need new land?"

NO. PLANNED PARENTHOOD IS EASY FOR US. WE NEED ONLY RESTRICT THE PRE-SESSILES.

"We don't trust you, you know. We'll be taking steps to see that you don't control human minds. I'm going to get myself checked over very carefully when I go home."

NATURALLY. YOU WILL BE HAPPY TO KNOW THAT WE CANNOT LEAVE THIS WORLD WITHOUT SPECIAL PROTECTION. ULTRAVIOLET WOULD KILL US. IF YOU WISH A GROG IN THE ZOO OF EARTH —

"We can take care of that. It's a good idea, too. Now, what can we do for you? How about some modified Dolphin's Hands?"

NO THANK YOU. A DESERT ANIMAL WITH SOMETHING LIKE HANDS WOULD BE BETTER. WHAT WE REQUIRE IS KNOWLEDGE. A

TAPE ENCYCLOPEDIA, ACCESS TO HUMAN LIBRARIES. BETTER YET, HUMAN GUEST LECTURERS WHO DO NOT MIND HAVING THEIR MINDS READ.

"Guest lecturers. That'll be expensive."

HOW EXPENSIVE? HOW MUCH ARE OUR SERVICES WORTH AS HERDERS?

"Good point." I settled myself more comfortably against the Grog's hairy side. "Okay. Let's talk business."

**I**t was a year before I touched Down again. By then, Garvey Limited was almost ready to show a profit.

I'd driven through the roughest deal I could think of. As far as the planet Down was concerned, Garvey Limited had a monopoly on Grogs. They couldn't have bought a pack of tabac sticks except through us. We paid fat taxes to the Downer human government, but that expense was almost minor.

We'd had major expenses.

The worst was publicity. I hadn't tried to keep the secret of the Grog power. That would have been futile. And that power was scary. Our only defense against a panic that could have covered human space like a blanket was the Grog's themselves.

Grogs were funny.

I'd kept pushing, pushing, pushing pictures. Grog's operating typewriters, Grog's guiding Down's expanding herds of cattle, Grog's in a spacecraft cabin, a Grog standing by during a tricky operation on a sick Kodiak bear. The Grog always looked just about the same. To see one was to laugh, and never to fear . . . unless there were unnatural crystalline certainties poking into the crevices of your brain.

The really important jobs for Grog's were just coming into existence. Already Wonderland had changed its laws to allow Grog's to testify in a courtroom, as expert lie detectors. A Grog would be present at the next summit meeting between human and kzinti space. Ships venturing into unknown space would probably carry Grog's, in case they met aliens and needed a translator.

Fuzzy Grog dolls were being sold in the toy stores. We didn't make a dime on that. But I was building for the future.

I took a day to rest up after landing, to say hi to Jilson and Sharon and Lois. Next morning I flew out into the desert. Now there was grass covering a lot of what had been barren land. I found a circle of white far below, and on a hunch I dropped.

The white was a flock of sheep. In the center nestled a Grog.

"Welcome, Garvey."

"Thanks," I said, not trying to shout. She would be reading my mind and answering through the nerve-implanted vocal equipment we'd started manufacturing in quantity two months ago. That had been another major expense, but a necessary one.

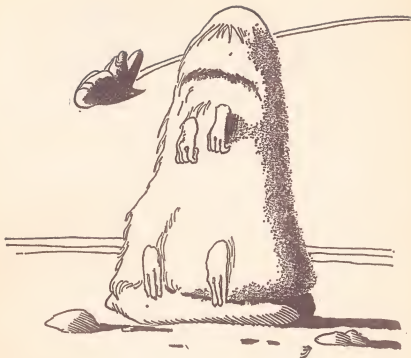
"What's all this about dolls?"

"We can't make any money on that. It's not as if there was a copyright on the Grog form." I circled the skycycle, landed and got off.

We talked things other than business. She wanted a Grog doll, for instance, and I promised her "lecturers," arranging them in order of priority. Getting them here would involve nothing more than paying their way and paying them for their time. None of them would have to make any kind of speech.

Neither one of us mentioned the ramscoop.

It was not on Down. Put a I weapon on Down and the Grog's could simply have made it their own; it would be no defense. We'd put it in close orbit around the Downer sun, closer than Mercury would have been. If the Grog's ever became a threat, the electromagnetic ramscoop field would go on. And Down's sun would begin behaving very strangely.



Neither of us mentioned it. What for? She knew my reasons.

It was not that I feared the Grogs. I feared myself. The ram-scoop was there to prove that I had been allowed to act against the Grogs' best interests. That I was my own man.

And I *still* wasn't sure. Could the last man aboard have sabotaged the motor? Could the Grogs reach that far? There was

no way to find out. If it was true, then anyone who boarded the old ship would report that it was A-okay, ready to fire, don't worry about it, Garvey. Forget it. Sleep easy.

Maybe I will. It's easy enough to believe that the Grogs are innocuous, helpful, desperate for friendship.

I wonder what we'll meet next.

— LARRY NIVEN

# THE FAIRLY CIVIL SERVICE

by HARRY HARRISON



*Lucky Civil Service employees!  
Nothing to do all day but care  
for a grateful, friendly public!*

Precisely at nine in the morning the post office opened and the first customers were allowed to enter. Howards knew this. Yet, as he straightened his Book on the counter before him, he could not prevent himself from glancing worriedly at the big clock on the wall. Why? This was just a work day like any other day. God, the fear, deep down, as the long black pointer clicked another notch towards the vertical!

Just another day, why should he be so concerned? He tittered nervously and turned his key in the lock of the multifrank before him, just as two people appeared on the other side of the counter.

"I wish to post this letter to Sierra Leone," the man said.

"A two-credit insurance stamp," the woman said.

They began to instantly squabble as to which of them had been there first, their voices crescen-

doing shriller and higher. Howards slapped his left hand on the Book and raised his right.

"Stop," he said, and they did, struck by the authority in his voice. "Reference B-86Y/254 in the Book of Postal Regulations states that all differences of opinion and priority are to be settled by the serving clerk. That is myself. Ladies first. Here is your insurance stamp, madam."

His fingers were snapping over the complex controls of the multifrank even as he spoke, and he was secretly proud of the assured way that he said it. The man stepped aside, the woman timidly proffered her insurance book as he stood with his finger over the *activate* button. With his free hand he flipped the book open, dropped it into the slot and pressed the button.

"That will be 22 credits 80, madam." The bills went into the

cash receptacle and her change rattled into the delivery cup. "Next," he said, not without a certain amount of condescension.

The man said nothing, he knew better than to argue. He certainly did. What was in the Book was correct. The man stepped away, and Howards thought that this day had certainly begun busily enough: but why the little shivering knot of fear, Howards?, he wondered to himself, and rubbed at the spot in his midriff with his knuckles.

A large, dark man with a full black beard filled the space outside the counter. "Do you know what this is?" he bellowed.

"I certainly do," Howards said. (Did his voice crack a little?) "That is a needle gun."

"You are correct," the man hissed in a voice like the breaking of poison waves. "It fires soundlessly a needle with such great speed that contact with the human body produces a hydrostatic wave that utterly destroys the nervous system. Would you like that?" White teeth appeared in the tangle of black beard.

"I would not like my nervous system utterly destroyed."

"You will then pay me the sum of 4,999 credits."

"I have no till or money. Cash is centrally supplied . . ."

"Fool! I know all that. I also  
THE FAIRLY CIVIL SERVICE

know that the payment of any sum over 5,000 credits must be specially authorized for any position. Therefore — 4,999 credits. At once."

"At once," Howards said crisply, and spoke aloud as he hit the keys. "Four, nine, nine, nine. . . ." "Now activate."

Howards hesitated for a mere fraction of an instant, sucked in his breath, then snapped his finger down on the *activate* button.

There was the rattle of small change from the delivery cup, and the man glanced down at it just as a gush of white vapor shot out into his face. He screamed and writhed and fell as the full force of the regurgitants, irritants and vesicants hit him at once.

"Foolish man," Howards said into the handkerchief he raised to his face, stepping back away from the gas. "Security was onto him as soon as I rang up 499,900,000 credits. Just a simple decimal shift. . . ."

It was almost nine, and the first customers would be in soon. A day like any other day — then why was he feeling this way? What way? As if he were imprisoned in the back of his own brain and screaming. Foolishness, this was not a proper thought for a public servant to have.

"Help me," the old woman said

just as the black hand touched the hour.

"Of course, madam." Where had she come from, like that, so quickly?

"It is my pension — " pushing a battered and torn payment book across the counter with her scaling, shivering hand. "They will not pay me my money."

"Money due is always paid," Howards said, flipping open the rusty book while trying to touch it only with the tips of his fingers. He pointed to a torn fragment of paper. "Here is the reason. The page is missing. To authorize payment you must get form 925/1k(43) and have it filled out."

"I have it," the woman told him, and pushed over — almost threw, in fact — an even more creased and soiled piece of paper. Howards hoped that none of his feelings were revealed on his face as he turned and read it.

"This is the correct form, madam, but it is not completely filled out. In this blank here you must enter your deceased husband's insurance number."

"I do not know his number," the woman shrilled and clutched tightly to the counter's edge. "He is dead and his papers, they were all destroyed, you see."

"In that case you must obtain form 276/po(67) which is an application to the proper author-

ities for the required information." He pushed the papers with, what he hoped was, a smile. "You can obtain an application for this form. . . ."

"I will die first," the old woman screamed and threw all her papers into the air so that they fluttered down around her like filthy confetti. "I have not eaten for a week. I demand justice. I must have money for food!"

It was all quite distasteful. "I wish I could oblige, madam, but I have no authority. You should apply for the form of application to see the Emergency Officer. . . ."

"I will be dead first!" she shouted hoarsely and thrust her face towards his. He could smell her sour breath and quickly withdrew. "Have you no pity on someone my age? I could be your mother."

"Thankfully, madam, you are not. My mother has the proper forms."

"Forms!" Her voice screeched higher and higher until it cracked. "You are more for forms than for human life. I swore I would kill myself unless I obtained money for food today. Save me!"

"Please do not threaten. I have done what I can." Had he? Was there some authority he should summon? Was he correct. . . .

"Better a quick death than one of slow starvation. Money — or I die!"

She had a large bread knife now and was waving it before him. Was this a threat? Did it call for the guards?

"I cannot," Howard gasped, and his fingers hovered over the keys in an agony of indecision. Guards? Doctor? Police?

"Then I die, and it is a world I do not regret losing."

She held one hand on the counter, palm up, and with a savage slash of the knife almost severed the hand from the wrist. Thick blood spurted high.

"What have you done?" he shouted and reached for the keys. But she began to scream and wave her arm and blood spattered him and gushed over the counter.

"The Book!" he gasped, "you're getting blood on the Book. You cannot." He pulled it away and began to dab at it with his handkerchief, then remembered that he had not yet summoned help. He hesitated, torn, then put the Book in the farthest corner and rushed back to his position. There was blood everywhere — had he made a mistake? — and the woman had sunk from sight but he could still hear her moans?

"Medical assistance," he said

quickly into the microphone. "First-aid needed. At once."

Should he do something for her? But he could not leave his station. And the blood, everywhere, on his hands and shirt. He held them out in horror. He had never seen so much human blood before. . . .

And at nine o'clock precisely, the post office would open. Another day, just like any other.

What was wrong with his hands? Was there something he should remember? Like a vanishing echo a memory rushed away — a memory of what? There was nothing wrong, he was at his position where he belonged, with his Book close at hand and the shining mass of the multifrank before him. He belonged. Of course he belonged. Then why, again, a fleeting, fading frightening memory that it was wrong?

Why was he looking at his hands?

Howards shivered and unlocked the machine and cleared it, flipped the test and operational switch so the light glowed green, checked the cleared reading and set up 4,999. . . .

This was not right. Why had he done it? With a furtive glance over his shoulder he quickly cleared the machine. The long black hand of the clock clicked one notch forward and was ver-

tical and an immense queue of people formed outside his position. They were jammed solid, all looking at him, quiet now, though there was a murmur from the rear.

“Good morning, sir, he said to the red-faced gentleman who headed the line. “What may I . . . .”

“None of your conversation. I want service, not chatter. This letter, special delivery, at once, to Capitulo, Salerno, Italy. What will it cost?”

“That depends,” Howards said, reaching for the envelope which the man pulled back.

“Depends upon what, damn it? I want to mail this thing, not talk about it.”

There was a murmur of impatience from the waiting people and, smiling insincerely, Howards said, “It depends upon the weight, sir. Special-delivery letters are delivered by orbiting rocket, and the charge varies according to the weight.”

“Then you can damn well stop talking about it and weigh it,” he said, thrusting the letter forward.

Howards took it, dropped it into the slot, then read off the price.

“Too damn much,” the man shouted. “Mailed a letter to Capitulo yesterday, and it cost less.”

“It probably weighed less, sir.”

“I wanna mail this package,” a small child said, thrusting an untidy bundle onto the counter.

“Are you calling me a liar?” the red-face man shouted, growing even redder.

“No, sir — just a minute, sonny — I simply stated that if it cost less it must have weighed less.”

“Damn nerve! Call a man a liar. Ought to thrash you. Wish to see your supervisor at once.”

“My supervisor does not see the public. If you wish to file a complaint the Complaint Office is in Room 8934 — ‘don’t do that!’” he added as the child pushed the package further across the counter so that it slid off the inner edge and fell to the floor. Something inside broke with a loud plop and an awful stench seeped out.

“You broke it!” the child screamed.

“I did not; take it at once,” Howards said, picking it up by an end of string and dangling it outside. The child ignored it and began to cry loudly.

“Man ought to be horsewhipped, treating a child like that!”

“Room 8934,” Howards said through clenched lips, hoping the man would leave.

A tall young man with red hair was bobbing up and down behind the weeping child. “I

would like to send a telegram to my uncle saying Dear Uncle, Need at Once Credits One Hundred. . . ."

"Would you please fill out the telegraph form," Howards said, pressing the switch that delivered a printed form into the dispenser outside.

"Bit of difficulty," the young man said, holding up both of his hands which were swathed in bandages and plaster. "Can't write, but I can dictate it to you, won't take a moment. 'Dear Uncle. . . .'"

"I am very sorry, but I cannot accept dictated telegrams. However any public phone will take them."

"Bit of trouble getting the coins in the slot. 'Dear Uncle. . . .'"

"Cruel and heartless," the young girl next in line sniffed.

"I would like to help you," Howards said, "but it is forbidden by regulation. However I am sure that someone near the end of the line will write your telegram for you, then I will be happy to accept it."

"How very smart of you," the young girl said. She was exceedingly attractive, and when she leaned forward her breasts rested tidily on the counter's edge. She smiled. "I would like to buy some stamps," she said.

Howards smiled back, with utter

THE FAIRLY CIVIL SERVICE

most sincerity this time. "I would be extremely happy to oblige, miss, except for the fact that we no longer issue stamps. The amount of postage is printed directly onto the envelope."

"How clever of you. But isn't it possible to buy commemorative stamps still held in the postal vaults?"

"Of course, that is a different matter. Sale to the public of commemorative issues is authorized in the Book by Reference Y-23H/48."

"How very intelligent of you to remember all of that! Then I would like the Centenary of the Automatic Diaper Service. . . ."

"Nerve, damned nerve, trying to get rid of me," the red face said, thrusting at him. "Room 8944 is closed."

"I have no doubt that Room 8944 is closed," Howards said calmly. "I do not know what is in Room 8944. But the Complaints Office is in Room 8934."

"Then why in blazes did you tell me 8944?"

"I did not."

"You did!"

"Never. I do not make that kind of mistake."

Mistake? Howards thought. Mistake! Oh, no.

"I'm afraid I have made a small mistake," he said, white-faced, to the girl. "There

is a later special order on the entry cancelling the issue of all commemorative stamps across the counter."

"But that should make no difference," she said, pouting prettily. "You can sell me a little teensy diaper stamp. . . ."

"If it was within my power, nothing would give me greater pleasure. But the regulations cannot be broken."

"Your head can be broken just like you broke this!" an immense and angry man said, thrusting the girl aside and pushing the crumbled package under Howard's nose. The stench was overwhelming.

"I assure you, sir, I did not break that. Would you kindly remove. . . ."

"My son said you did."

"Nevertheless, I did not."

"Call my boy a liar!" the man roared and reached across the counter and grabbed Howards by the shirt.

"Stop that," Howards gasped and tried to pull away and heard the material tear. He groped out and hit the guard switch. It snapped off clean and rattled to the floor. Howards pulled back harder and most of his shirt came away in the man's hand.

"Stamp, please," someone said, and a letter dropped into the slot.

"That will be two credits,"

Howards said, hitting the breakdown button, then ringing up the postage.

"You said Room 8944," the red face shouted.

"Been mistreating the machine," a sour-faced repairman said appearing beside Howards.

"Never, I just touched it, and it broke."

"These machines never break."

"Help me," a frail old woman said, pushing a battered and torn payment book across the counter with a scaly and shaking hand. "It is my pension. They will not pay me my money."

"Money due is always paid," Howards said, closing his eyes for an instant — why? — then reaching for the book. He caught sight of the man pushing up to the counter, a man with a tangle of black beard and a hateful expression.

"I know . . ." Howards began, then stopped. What did he know? Something pressed hard inside his head and tried to burst out.

"I do not know his number," the old woman screamed. "He is dead — and his papers, they were all destroyed you see."

"Do you know what this is? It is a needle gun."

"Not in Room 8944."

"Just one diaper. . . ."

Howards clutched graspingly at his head and did not know if he was screaming or if he was

hearing someone else scream.

Welcome blackness engulfed him.

"Now just sip this, and you will find yourself feeling fine in a few moments."

Howards took the cup that the Examiner held out to him and was surprised to discover that he needed both hands to hold it. He noticed that the backs of his hands were beaded with sweat. As he sipped he felt the helmet lifting from his head, and when he looked up he had a swift glimpse of it just before it vanished through a recess in the ceiling.

"The examination — aren't you going to proceed?"

The Examiner chuckled and steepled his heavy fingers on the desk before him. "A not uncommon reaction," he said. "The examination is complete."

"I have no memory. It seemed as though the helmet came down, then went up again. Though my hands are covered with sweat." He looked at them, then shivered with realization. "Then the examination is over. And I . . ."

"You must have patience," the Examiner told him with ponderous dignity. "The results must be analyzed, compared, a report drawn up. Even electronically this takes time. You should not complain."

"Oh, I am not complaining, Examiner," Howards said quickly, lowering his eyes. "I am grateful."

"You should be. Just think of the way all of this used to be. Hours of oral and written examinations, with the best marks going to the crammers. You can't cram for a simulator examination."

"I do know that, Examiner."

"Just a few moments of unconsciousness, and the machine mentally puts you through your paces, puts you into situations and judges how you respond to them. Real situations that a postal clerk would face during the normal course of his duties."

"Normal duties, of course," Howards said, frowning at his hands, then wiping them quickly against his side.

The Examiner stared at the figures that raced across the screen on his desk. "Not as good as I expected, Howards," he said sternly. "You'll not be a postal clerk this year."

"But — I was so sure — the twelfth time."

"There is more to clerking than just knowing the Book, Go away. Study. Apply yourself. Your grade this time is high enough so that your student's status will continue another year. Work harder. Very few students are

carried past their fifteenth year."

Howards stood, helplessly, and turned before he left.

"My wife asked me, to ask you, we're not getting younger. Planning permission for a child."

"Out of the question. There is the population problem for one thing, your status for another. If you were a clerk, the application might be considered."

"But there are so few clerks," Howards said weakly.

"There are so few positions. Be happy you are a registered student with rations and quarters. Do you know what it is like to be an Under-unemployed?"

"Thank you, sir. Good-by, sir. You have been most kind."

Howards closed the door quickly behind him — why did he keep thinking there was blood on his hands? He shook his head to clear it.

It would be hard to tell Dora. She had hoped so.

But at least he still had his book. A whole year to memorize it again. That would be good. And there would be inserts and additions, that was always good.

He walked by the post office in the lobby of the building with his eyes averted.

—HARRY HARRISON



# Galaxy Bookshelf

by ALGIS BUDRYS

The appearance of a second, and revised, edition of Damon Knight's *In Search of Wonder* (Advent: Publishers; P.O. Box 9228, Chicago, Ill. 60690, \$6.00) is the occasion for several discoveries. One of them is that Damon deserved every good thing he got after the appearance of the first edition of these critical essays. You may take my word for it — if you haven't already guessed as a result of your devoted readership of these, my golden thoughts — Damon Knight sets an as yet unequalled standard in these matters, and furthermore does so without the guidance of his own prior example.

Second, Damon Knight apparently was never a simple critic of science fiction, but is instead a gifted, skilled polemicist for a personal, intuitive literary philosophy . . . that is, an editor. One of the great science-fiction editors, and in one narrow sense the

most spectacular of them all because unlike Gernsback, Campbell or Palmer, or Boucher, he has functioned best when he has had control of no magazine at all. Unique among the handful of headstrong, fussy, exasperated and exasperating iron whims that have shaped the nature of this field, Knight is partially paralyzed by the opportunity to select and have published such original words as would fulfill his image of the field. His record as an overt editor is one of coping — with indifferent publishers, with inadequate budgets and with, if I remember right, a certain startling inability to see the real point of a story in manuscript. His productions have a sketchy quality to them, like the furnishings and victuals at Honore Balzac's house, if we are to believe Stefan Zweig. Here a placard on the wall bears the scribbled phrase "Here hangs a Rembrandt," and there the din-

ner table supports a sheet of paper on which is written the sumptuous bill of fare. Somehow, the elements of medium, bank-roll and inventory have never met well for Damon. It was when he was reviewing what had already reached print, at the behest of other image-shapers, that he burst forth on us all as a major directorial voice.

Legend has it that Damon Knight was a curly werewolf, slashing the throats of the chuckleheads, splashing so much gore that his spectre haunted the night thoughts of authors about to do less than their best and caused them to think twice of foofooraw. Slash he did; why else did God make sheep? But his effect, his credential and his value lie in his poking and prying at the well-enough done. His exact appreciations of the well done are very good, and useful; but they began a fashion for superlatives which no writer, not even Kuttner, Sturgeon, or some of the others Damon treated so well on occasion, fully deserves. This field has yet to see the writer worthy of the praise this educated man at times expressed . . . but I quibble, when I should be going on to explain how meaningful and how influential Knight was when summing up the subtle but suddenly obvious flaws in work that had seemed pretty good. He

made of J.T. McIntosh an instruction manual for many, whereas all he did with his total and vastly entertaining destruction of Hall, Flint and Ackerman was summed up when Ace reissued *The Blind Spot*, and with an Ackerman introduction.

These are the functions of an editor: the instruction of the young, the maintenance of an ideal and above all the isolation of the subtle flaw. They require special qualities in their practitioner. Any idiot can spot the big flops, every jackass serves himself, and any rabblrouser will happily divert you with his special music. The literary criticism of science fiction as she is presently practiced offers excellent examples of all this.

In this second edition you will find, among other goodies from the earlier version, the famous destruction of A.E. Van Vogt that first made Damon's reputation. You will also find, in print for the first time, the review that caused him to quit reviewing when F&SF refused to publish it. (What a small bone it is, after all, but perhaps it came from a dear beast). You'll also get a chance to note the only time Damon was totally wrong, which is a hitherto unpublished review of a novel of mine called *Who?* I am flattered that the Lord chose my work for the focus of the

necessary event when Damon was saved from the curse of perfection. In any case, for these and other magnificent bumps on the road to the apotheosis of our art, you should mail the six dollars to Advent tonight.

*The Playboy Book of Science Fiction and Fantasy* (Playboy Press, \$5.95) contains some of the best science fiction and fantasy stories of our immediate time. Partly, this is because, unlike many collections from the slick magazines, its table of contents lists such contributors as Sheckley, Bradbury, Tenn, Clarke, Bloch, Pohl, Nourse, Sturgeon, Ted Thomas, Avram Davidson, and Fredric Brown in addition such other pretty good people as Bernard Wolfe and Bruce Jay Friedman.

I personally think the effect of *Playboy's* patronage of Arthur C. Clarke has been disastrous. I believe that everyone who wants to read George Langelaan's "The Fly" has either read it in one of its many previous republications or deserves his personal Xeroxed copy from Reader Service. I think they had a much better Davidson to chose from. But by any reasonable standard Ray Russell's initiation of science fiction into the magazine and A.C. Spector'sky's continuance and encouragement of it have been two

GALAXY BOOKSHELF

massive favors *Playboy* has done us, and you should buy this book to enjoy the result, if not the silly arrogance with which it is given you.

Neither Russell's nor Spector'sky's view of the field is exactly the same as mine, but the differences I find only broadening. What I find actively repellent occurs in the introduction and in the individual story blurbs, which miss no opportunity to amplify *Playboy's* accomplishment by actively belittling the magazines from which these writers came. It is a fact that *Playboy* took in and sheltered many a man who'd been starving among the pulps. It is also a fact that with the possible exception of the late Charles Beaumont, neither Ray Russell nor his particular successor in this concern, A.C. Spector'sky, have a single enduring writer of their own to point to. Under those circumstances, the sneers and arabesque posturings of the blurb prose present altogether too epicene a target. And for the insistent use of that neologistic reference, "sci-fi," we also thank Thee.

Doubleday, like a couple of other publishers, has been in this field for some twenty years now and has either learned nothing or actively wants to debase the general public's understanding of the

medium. Else, why *Best of Amazing* (\$4.50), an extraordinarily inept melange of selections from that magazine's avatar-crammed past by Joseph Ross, who in his secret identity is a high school English teacher and handles the language exactly like it.

Joe Ross has trouble getting subject and predicate within shouting distance of each other, refers to David H. Keller, M.D., as "the good doctor" with a straight face, obviously couldn't then resist calling Murray Leinster "The Dean of Science Fiction" and is like a fly in amber. He has gazed back upon the longest publishing history in the field, contemplated an inventory which contains some of the most interesting fiction contributed to the field, and he has selected "The Lost Machine" by John Beynon Harris. This is a now rather clumsy and always bathetic piece, presumably for its historical interest as an early example of work by a writer who had to change his name and most of his habits before he could accomplish anything major. He has also selected "The Worm," and burbled about his joy, as he went on to select the remaining contents — from a storehouse forty years in the filling! — because at last this fine "Kelleryarn" (sic) would be back in print. It is not an actively bad piece, at that — it merely occu-

pies the space that could have been taken up by any one of a dozen other Keller expositions of this same monomaniacal mood. For that matter, it occupies the space that might have been taken up by a story, but by that criterion most of these pages would be blank.

Murray Leinster's "The Run-away Skyscraper" — complete with chapter-headings from its original *Argosy* appearance — is included here, (in this book offered as a tribute to Hugo Gernsback, editor of *Amazing* beginning in 1926 and leaving in 1929), as an example of the Founding Father's skill at selecting reprints.

Would that Joe Ross had that skill.

What possessed him to make of this very first *Amazing* anthology such a pudding of a job? "Marooned off Vesta" by Isaac Asimov was indeed Ike's first sale. His first story came several attempts later. And his "Anniversary," a sequel written thirty years later, is a stunt, a contrived stunt and a badly contrived stunt.

"The Metal Man," by Jack Williamson, does much to document Abe Merritt's influence on the young writer. It is a story full of memorable images, based on the notion that life is a vital force, indifferent to matter and capable of imparting itself to almost any

substance. Specifically, early Williamson, like much of Merritt before him, uses words and concepts like "energy," "radioactivity," and "crystalline" in special senses, endowing them with particular potency.

You can often tell what ideas in a story were felt most powerfully by the writer and had obvious special meaning to him. In most cases, it's the sexy parts or the violent parts. But Williamson, perhaps like some others, was very much concerned with manifestations of the *elan vital* in those early days of this field. There isn't really much to "The Metal Man's" events, evaluated for story, but they do present a series of images in which life and power are glimpsed in massive universal motion which merely includes Man and flesh but does not defer to him or it. This sense you can extract from this story and find enjoyable and thought-provoking. But there are many better examples. Was Ross perhaps simply trying to locate the earliest possible example of everything that was done better elsewhere later? Is his soul that of the antiquarian?

"Pilgrimage" by Nelson Bond was, I would say, a reject from *The American Magazine* or *Collier's*. That was their mistake. Reprinting it in this context is Ross's.

"Sunfire!" by Edmond Hamilton is not the grand world-wrecking Hamilton, but the more contemporaneous poetic Hamilton of "What's It Like Out There?" and "Home Run." It is a hitherto unreprinted example of that letter mode, you got to say that for Joe and his sure touch for the not-quite. Even the most consistent writers in this field will write a so-so yarn to either build up to or come down from a good piece of work, whatever that work might be an example of. Ross's ability to select all valleys has the dizzy dazzle of consistent disaster all over it.

Finally, there is "Try To Remember," by Frank Herbert, a man who has written excellently once or twice, very well almost always, and grindingly monotonous sometimes. This is because Herbert, like for example Van Vogt and the late Mark Clifton, is a compulsive magician; a quick study or a dedicated apprentice in some arts such as semantics, personnel management or eye-training which will turn all our lives into gold. Periodically, this kind of writer selects an intrinsically dull magic, uses a particularly contrived plot, and chops out his wooden characters too crudely, all at once in the same story. Then all his potential defects conjoin, and Oh, boy!

This book does not represent

either contemporary science fiction or the true history of *Amazing Stories*. Its introductory tribute to Hugo Gernsback is so ingenuous as to seem insincere; whatever worth it offered as a genuine token is pretty well undermined by Ross's subsequent dragging-in of H.L. Gold, of all people, to stand shoulder-to-shoulder with Hugo. (I would like to see the look on the grand old man's face). Its copyright dates fall into the past with such vim as to evoke the best spirit of Frederick Fell, Pellegrini and Cudahy, McBride and some of the other publishers who were bumbling around this racket in the early 1950's, almost determinedly refusing to pick up anything that betrayed quality or sophistication, leaning on sheer spavined antiquity as a selling point.

Ross, I don't worry about. An English teacher can always make out as long as he remembers not to split infinitives in public and to never listen to what the words are meaning. *Amazing* I don't worry about, because somebody always comes along with a fresh supply of *tana* leaves every time it appears to be dying at last. But Doubleday . . . what on Earth has happened to your shrewd commercial brain, gents? Surgically implanted in a lustful giant robot, you say?

*Orbit II* (G.P. Putnam's Sons, \$4.95) is Damon Knight's second compendium of original stories. It follows hard on the heels of *Orbit I*, so I assume this latest venture in producing books like magazines is either a success or a mistake that hasn't been acknowledged yet. (The two are often indistinguishable in publishing).

Editorially, it's the curious beast my review of *In Search of Wonder* might have led you to expect. It is more a sign that Damon's heart is in the right place than it is a really satisfactory book.

His selections are by Theodore Thomas, Kate Wilhelm, Richard McKenna, Gene Wolfe, Philip Latham, Joanna Russ, R.A. Lafferty, Kit Reed, and Brian Aldiss. I was struck by the terrific similarity of this lineup to a *Magazine of Fantasy and Science Fiction* contents page, as well as by the thought that Damon seems to have put this book together in his living room. But the best editors have always had a reasonably well defined group of writers clustered around them; what croggles me is that here they're somebody else's group, if you define possession by frequency of use.

Thomas's "The Doctor" is a great accomplishment, an exact statement of a central truth from which anyone with any sense or

understanding can go on to draw echoes in dozens of factual situations. This is one of the primary areas of opportunity for fiction; it is by the nature of the medium *the* area of opportunity for science fiction. This one is a straight, undeviating statement from beginning to end, barely turning aside the fraction of an inch required to explain how its doctor-protagonist got back in time so far.

After this opening chord, quality in the book drops quickly. Kate Wilhelm's "Baby You Were Great" is pretty good and contains some great inventive thinking, but not in places that will reach the reader. Writers should not write for writers, although we all do to some extent. It's a little like a roofer's carefully preparing the underside of a shingle so the wrecker who'll eventually dismantle the house can admire his skill.

Richard McKenna, who as you know is dead, was an excellent writer and a memorable person, a man capable of feeling and thinking on levels more of us should attain. "Fiddler's Green" demonstrates these qualities in its author. So do dozens of other stories, however, and the low overall quality of this umpteenth posthumous selection verges on insult to the bones.

Gene Wolfe's "Trip, Trap" is  
GALAXY BOOKSHELF

indistinguishable from dozens of other academe-oriented jokes published in F&SF during the Boucher years. Apparently, too, the stimulus of buying this kind of story automatically invokes an editorial response in the form of a clearly overblown blurb.

Philip Latham's "The Dimple in Draco," on the other hand, is representative of the kind of engineers' in-group "story" (astro-nomic division) that ASF used to put out once in a while. It's poorly representative, however, and when found outside *Analog's* pages leads one to think maybe Damon bought this reject from John just to prove he can publish a story he doesn't personally like. For this sort of purpose, of course, an intrinsically unlikeable story is even more desirable than a good one.

Joanna Russ is represented by two stories about a single character, a female Grey Mouser named Alyx. In these two stories she is provided with contradictory pasts, neither of them clearly suitable for the matured protagonist of the actual stories. Aside from that, she's a very pleasant creature, and I hope there'll be more of her. It's pretty lightweight stuff for two stories, but if you don't put an issue together frequently, I guess you got to get your series character out in bigger-than-usual lumps.



## MUSIC OF TOMORROW

Here is music composed on computer and transducers, ranging from computer-played versions of Christmas carols and rounds to the complex sounds that offer a new dimension in musicology. Composers include Dr. John R. Pierce, Dr. M. V. Mathews, David Lewin, James Tenny, etc. 18 selections on a 12-inch, high-fidelity, long-playing record produced by Decca. A "must" for your record library and a conversation piece for all occasions. Priced \$4.95 postpaid — send in the coupon today.

**Galaxy Publishing Corp.**  
**421 Hudson Street,**  
**New York City 10014**

Yes, send me my 12-inch hi-fi record of *Music from Mathematics* right away. I enclose check or money order for \$4.95.

Name .....

Address .....

City & State ..... Zip Code ....  
 (Offer good in U. S. A. Only)

R.A. Lafferty's "The Hole in The Corner" is the second-best story in the book; totally indescribable, it represents what can be done with the *F&SF* style, (even though Lafferty's natural home is right here in *Galaxy*).

To get it done, you have to be not just witty and college educated. You have to be far enough away from those days to have some idea of what's real and what isn't. That gives you terrific scarcity value, because of all the kinds of story there are, the notional mode is the easiest in which to write badly well enough to get by.

What I mean by that perhaps cryptic remark may become clearer to you if you read the final story in *Orbit II*, Brian Aldiss's "Full Sun." Then there's Kit Reed's "The Food Farm," which like most of the stories in this book takes a notion and gives it the simplest possible twist, but with a good vocabulary and lots of cuteness lubricating the hard parts. Essentially, this kind of story is a spatter of code words and recognition symbols, evoking the spirit of intelligence and inquiry, flaunting credentials of sophistication. When you touch them they vanish, or become at best cardboard, Damon, cardboard.

— Algis Budrys



# **volume 1      NUMBER 1**

**A new science-fiction magazine  
with a new concept in publishing**

**Each issue will be filled with  
stories by Foreign Authors**

## **INTERNATIONAL** **SCIENCE-FICTION**

Will give American readers a chance to read the science-fiction stories by Authors popular in the rest of the world. Written and translated by the top writers throughout the world.

We hope you will like it.

**PLEASE LET US KNOW!**

**NEWSSTAND ONLY**



Seated: Bennett Cerf, Faith Baldwin, Bergen Evans, Bruce Catton, Mignon G. Eberhart, John Caples, J. D. Ratcliff. Standing: Mark Wiseman, Max Shulman, Rudolf Flesch, Red Smith, Rod Serling.

## “We want to test your writing aptitude”

By Gordon Carroll

Director, Famous Writers School. Former editor, *Reader's Digest*, *Time*, *Inc.*, *Coronet*

If you want to write, my colleagues and I would like to test your writing aptitude. We'll help you find out if you can be trained to become a successful writer.

Several years ago, we started the Famous Writers School. Our aim was to help qualified people acquire the skills they need to break into print. We poured everything we knew about writing into a new kind of professional training course, which you take at home and in your free time. After a solid grounding in fundamentals, you get advanced training in the specialty of your choice—Fiction, Non-Fiction, Advertising or Business Writing.

Each of your writing assignments is examined by instructors who are themselves professional writers or editors. Your instructor spends up to two hours analyzing your work. He blue-pencils corrections right on it — much as an editor does with established writers. Then he returns it to you with a long personal letter of advice and specific recommendations.

This training works well. Our students have sold their writing to more than 100

publications including *Reader's Digest*, *True*, *Redbook*.

Stephen Novak of Wayne, N. J., says, “I just received a check from *Ellery Queen's Mystery Magazine*. That's 11 stories sold in six months.” Doris Stebbins of S. Coventry, Conn., who has sold six stories to *Woman's Day* for \$2,050 writes, “Taking your Course has made it all possible.”

### Writing Aptitude Test offered

To find out if you can benefit from this training, send for the School's Aptitude Test. If you test well, or offer other evidence of writing ability you may enroll. But there is no obligation to do so.

#### Famous Writers School

Dept. 6659, Westport Connecticut 06880

I want to know if I have writing aptitude. Please mail me, free, your Writing Aptitude Test and 48-page illustrated brochure.

Mr.

Mrs. ....

Miss [Circle one and please print]

Street.....

City.....

State.....

Zip.....

Accredited by the Accrediting Commission of the National Home Study Council.